

## Robotics Certificate

(Maintenance Technology or Manufacturing Technology – Associate Degree path)

This certificate program is designed to equip students with the foundational skills and knowledge necessary to gain entry to the robotics field. Through a blend of classroom lecture and hands-on experience, students will learn electrical theory; how to install, program, or repair robotic controllers and related equipment; how to troubleshoot robotic systems; and how to perform preventive or corrective maintenance on robotic systems or components.

This certificate is designed to prepare students for career success in robotics. The overall growth of the manufacturing industry and related fields will require a growing number of robotics technicians to install and maintain robotic systems and components. This program is a good fit for people who enjoy working with their hands, with an emphasis on spatial conceptualization and mechanical reasoning. Those who graduate with this certificate have a solid understanding of the machinery and equipment used in the robotics field.

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

### Career Preparation and Related Courses

		SUGGESTED SEQUENCE	CREDIT HOURS	CONTACT HOURS	
ROBO 1110	Robot Operations	■ □ □ □	3	64	
ROBO 1440	Material Handling Robot	■ □ □ □	3	64	
<i>Controls Pathway: select</i>					
ELEC 1300	Electrical Equipment & Introduction to Machine Circuits	■ □ □ □	2	32	
OR					
ELEC 1111	Electrical Fundamentals for Non-Electrical Tradesmen	■ □ □ □	2	32	
<i>Welding Pathway: select</i>					
ATWD 1110	Fundamentals of Gas & Arc Welding	■ □ □ □	2	32	
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MECT 2640	Programmable Logic Controls 1—Allen Bradley PLC	□ ■ □ □	3	48	
<i>Controls Pathway: select</i>					
MECT 2840	Panelview Programming	□ ■ □ □	3	48	
<i>Welding Pathway: select</i>					
ROBO 1435	ArcTool Robot Welding	□ ■ □ □	3	64	
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<i>Controls Pathway: select</i>					
ROBO 2445	Handling Tool Robot Features & Options	□ □ □ ■	3	64	
<i>Welding Pathway: select</i>					
ROBO 2450	Vision Robot	□ □ □ ■	3	64	
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			Total	17	336

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:

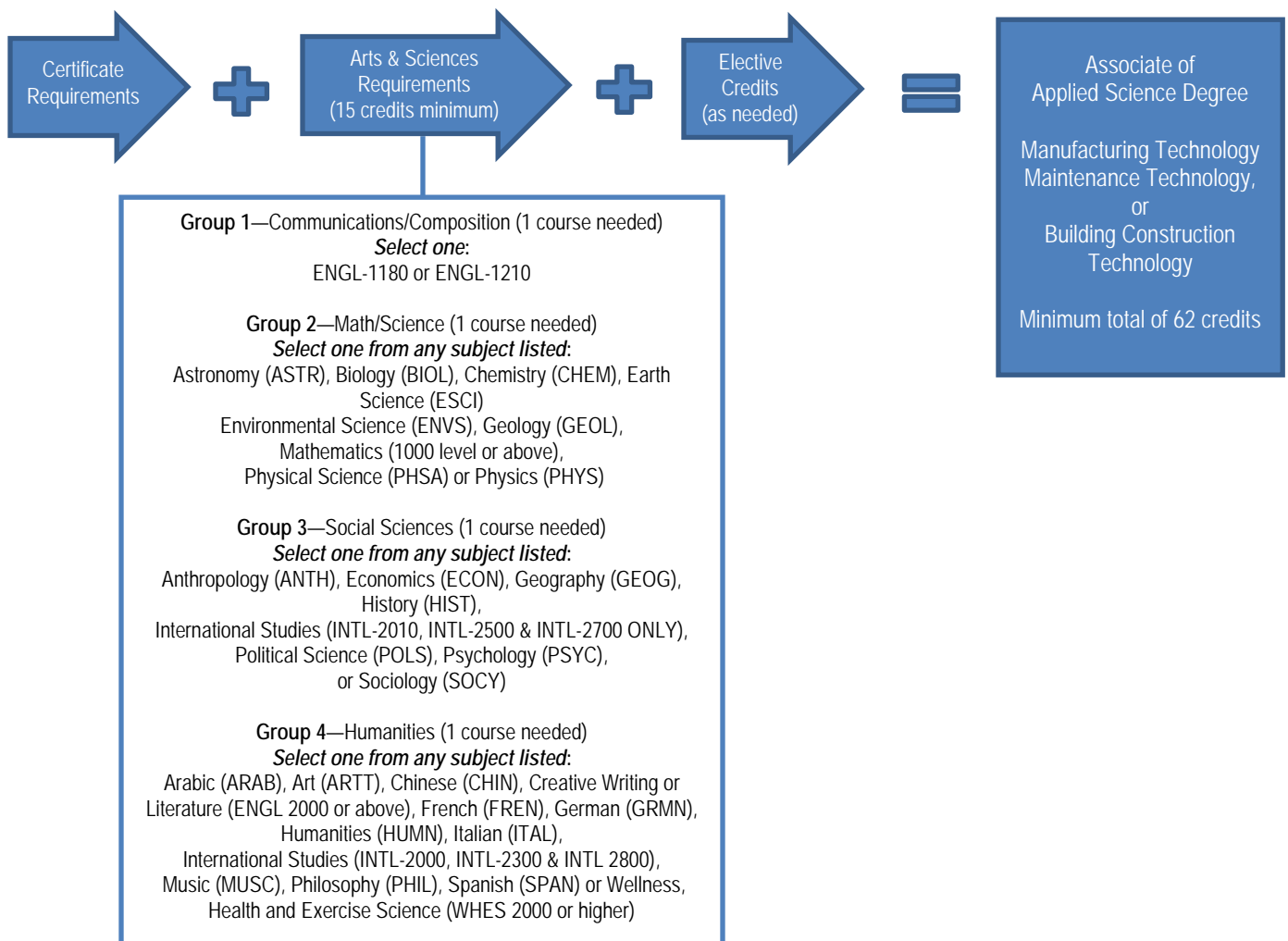
ATTR 1600	Industrial Safety—Skilled Trades	ATTR 1150	Technical Report Writing
ITML 1000	Microcomputer Literacy	CORE 1060	Industrial Computer Technology
MECT 1310	Pneumatics Technology Fundamentals	MECT 1320	Industrial Hydraulic Fundamentals

## 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 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 Robotics Certificate Program at Macomb, contact the Applied Technology and Apprenticeship Department at 586.445.7438 or [apprenticeship@macomb.edu](mailto:apprenticeship@macomb.edu) .