Macomb Community College
Education • Enrichment • Economic Development
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Applied Technology & Apprenticeship

Electrical—Industrial Maintenance Certificate

(Maintenance Technology – Associate Degree path)

This certificate program is designed to equip students with the foundational skills and knowledge necessary to gain entry to the electrical-industrial field. Through a blend of classroom theory and hands-on experience, students will learn electrical theory, blueprint reading, mathematics, electrical code requirements and safety practices.

This certificate program is designed to prepare students for success in careers in the electrical-industrial industry. Students who are interested in this field should be aware that most states, including Michigan, require electricians to pass a test and be licensed. The preparation for becoming licensed is a mandatory apprenticeship, which requires a sponsoring employer with a journeyman or master electrician on staff. Classroom training is a required component of an electrical apprenticeship. The classes included in this certificate program are approved by the State of Michigan Electrical Division for use in an apprenticeship program. The overall growth of the manufacturing industry and related fields will require a growing number of licensed electricians to install and maintain industrial equipment.

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 1350	Arithmetic & Introductory Algebra for Electrical & Allied Crafts	■ ☐ ☐ ☐	2	32
ELEC 1300	Electrical Equipment & Introduction to Machine Circuits	■ ☐ ☐ ☐	2	32
ELEC 1141	Basic Electronics	■ ☐ ☐ ☐	3	64
ELEC 1151	Test Equipment & Troubleshooting	■ ☐ ☐ ☐	3	64
ATAM 1360	Electrical Circuitry - Algebra & Trigonometry	☐ ■ ☐ ☐	2	32
ATEM 1350	Electrical—Mechanical Blueprint Reading	☐ ■ ☐ ☐	2	32
ELEC 1310	Basic Direct & Alternating Current Motor Control Circuits	☐ ■ ☐ ☐	2	32
MECT 2645	PLC Basic Programming—Allen Bradley	☐ ■ ☐ ☐	4	96
ATAM 2350	A.C. Circuitry—Trigonometry & Vectors	☐ ☐ ■ ☐	2	32
ELEC 2370	Polyphase A.C. Fundamentals, Electrical Instruments & Illumination	☐ ☐ ■ ☐	2	32
ELEC 2550	Industrial Electronic Fundamentals	☐ ☐ ■ ☐	2	32
ELEC 2380	Alternating Current Machines	☐ ☐ ☐ ■	2	32
ELEC 2560	Welding Controllers	☐ ☐ ☐ ■	2	32
ELEC 2410	National Electrical Code	☐ ☐ ☐ ■	2	32
		Total	32	576

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:

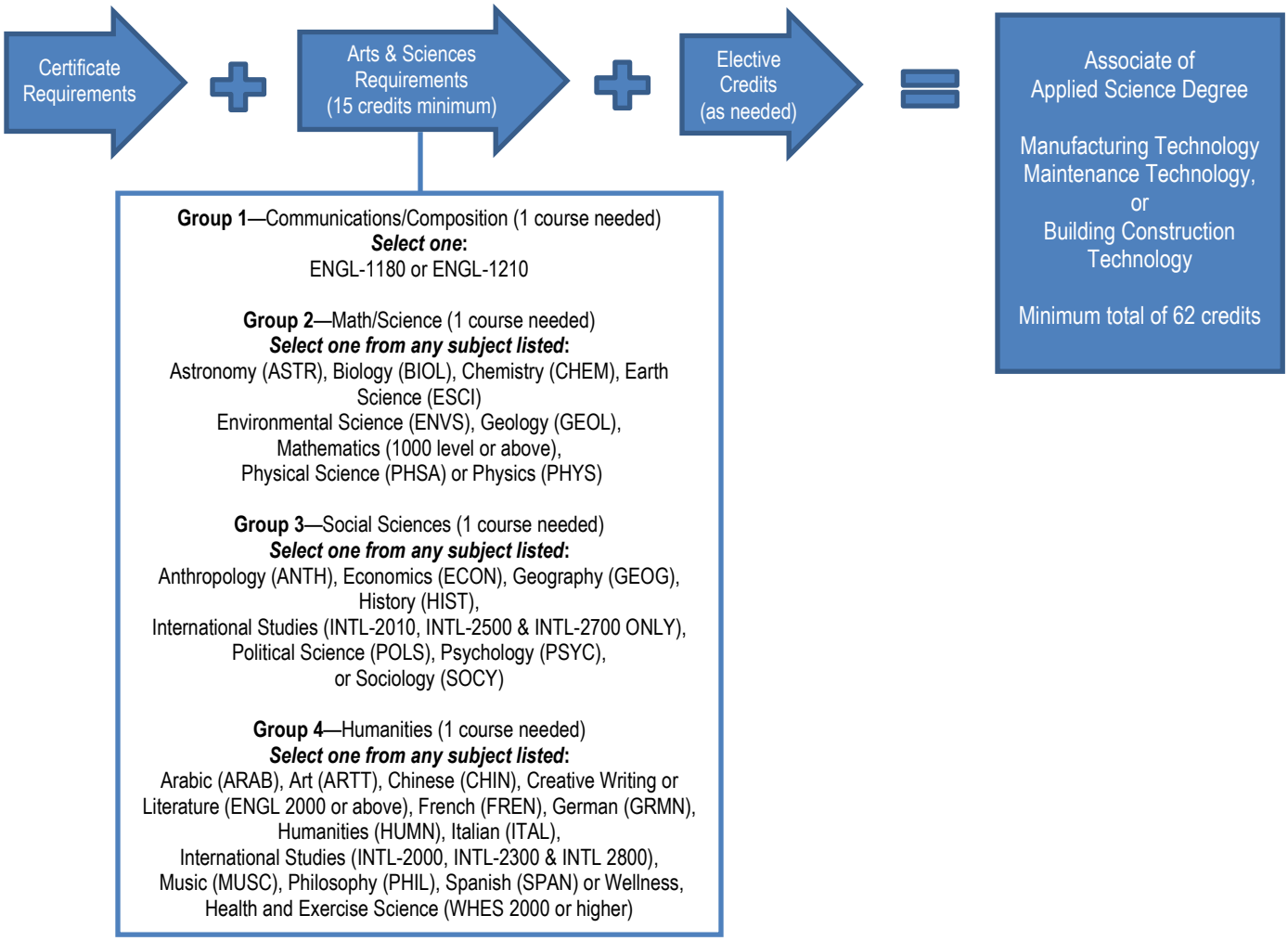
MECT 1310	Pneumatics Technology Fundamentals	ATSS 1150	Heat Fundamentals
MECT 1320	Industrial Hydraulic Fundamentals	ATSS 1160	Steam Boilers (Low & High Pressure Operations)
ATPP 1100	Plumbing—Fundamentals	ATTR 1600	Industrial Safety—Skilled Trades
ATPP 1120	Plumbing—Heating	ATWD 1110	Fundamentals of Gas & Arc Welding
ROBO 1200	Robot Operations, Handling Tool, & Programming	ATTR 1150	Technical Report Writing

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 Electrical – Industrial Maintenance Certificate Program at Macomb, contact the Applied Technology and Apprenticeship Department at 586.445.7438 or apprenticeship@macomb.edu .