

CERTIFICATE OF ACHIEVEMENT - MANUFACTURING TECHNOLOGIES, INDUSTRIAL MAINTENANCE

The Industrial Maintenance Certificate is designed to prepare students to work as a maintenance technician in a variety of industrial environments and will equip them with the hands on technical skills required by industry. Students will learn skills in the areas of industrial electrical systems, Programmable Logic Controllers (PLC's), manual machining techniques, welding techniques, and HVAC systems.

Certificate Outcomes

Student completing this Certificate will:

- Learn hands on technical skills in the areas of Electrical controls, Welding, Manual Machining, and HVAC.
- Diagnose and troubleshoot electrical and mechanical systems.
- Practice safety at all levels in a modern industrial environment.

Certificates of Achievement are a set of courses within an AAS degree that can serve as a stepping stone to an AAS degree or allow students to enter the workforce. Certificates of Achievement have a general education component.

To earn a Certificate of Achievement, students must:

1. Maintain a minimum cumulative GPA of 2.0 (see requirements for graduation.)
2. Complete a minimum of 15 semester credit hours within the college.
3. Satisfy General Education requirements for the AAS (<http://catalog.tmcc.edu/degrees-certificates/general-education/aas>).
4. Have no financial or library obligation to the college.

General Education Requirements

Communications 3

Recommended:

BUS 107 Business Speech Communications

Human Relations [3]

Requirement Embedded:

MPT 140, ELM 110, ELM 127, WELD 211, WELD 212

Mathematics [3]

Requirement Embedded:

ELM 110, ELM 134, MPT 140, WELD 211, WELD 212

Certificate Requirements

AC 102	Refrigeration Theory	3
AC 198	Special Topics in HVAC (choose 3 units)	0.5-6
ELM 110	Electrical/Electronic Circuits	4
ELM 127	Introduction to AC Controls	3
ELM 129	Electric Motors and Drives	3
ELM 134	Programmable Logic Controllers I	3
MPT 140	Quality Control	3

MTT 101	Introduction to Machine Shop	3
MTT 105	Machine Shop I	3
MTT 250	Machine Shop III	3
OSH 222	General Industry Safety	1
WELD 211	Welding I	3
WELD 212	Welding I Practice	2
Total Units		40

Course	Title	Units
1st semester		
ELM 110	Electrical/Electronic Circuits	4
AC 102	Refrigeration Theory	3
WELD 211	Welding I	3
MTT 101	Introduction to Machine Shop	3
ELM 127	Introduction to AC Controls	3
Semester Total		16

2nd semester		
ELM 134	Programmable Logic Controllers I	3
AC 198	Special Topics in HVAC	3
WELD 212	Welding I Practice	2
MTT 105	Machine Shop I	3
OSH 222	General Industry Safety	1
Communications		3
Semester Total		15

3rd semester		
ELM 129	Electric Motors and Drives	3
MTT 250	Machine Shop III	3
MPT 140	Quality Control	3
Semester Total		9
Total Units		40