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Heating, Ventilation, Air Conditioning, and Refrigeration - CERT B

Semester-by-Semester Pathway

A Certificate is outlined coursework that is designed to prepare a student to head out into the workforce in a short timeframe or for career advancement. This certificate totals 42 credit hours. Consult with an advisor for more information. Not all courses are offered each semester.

( ) are Systemwide Transfer Courses

(★) are recommended for this degree pathway.

Semester 1 - Fall				
Complete	**Course ID**	**Course Title**	**Credit Hours**	**Notes**
Required Courses				
	AE100	AC/DC Circuits	4.00	Fall 2026, Spring 2027
	ME115	HVAC Fundamentals	4.00	Fall 2026, Spring 2027
	ME131	EPA 608	1.00	Fall 2026
	ME132	HVAC Load Calculations	1.00	Fall 2026
	ME133	HVAC Duct Sizing	1.00	Fall 2026
	ME134	HVAC Code Requirements	1.00	Fall 2026
	ME140	Low Pressure Boilers	3.00	Spring 2027
Electives				
	Industrial Safety Electives		1.00	
		Semester Total:	**16.00**	

Semester 2 - Spring				
Complete	**Course ID**	**Course Title**	**Credit Hours**	**Notes**
Required Courses				
	AE150	Programmable Logic Controls (PLCs)	3.00	Fall 2026, Spring 2027 Prereq: AE100 AC/DC Circuits.
	AE155	Electrical Maintenance	3.00	Fall 2026, Spring 2027 Prereq: AE100 AC/DC Circuits.
	ME110	Fundamentals of Motor Controls	3.00	Fall 2026, Spring 2027 Prereq: AE100 AC/DC Circuits.
	ME116	Commercial Refrigeration	4.00	Spring 2027
	ME117	Commercial Heating and Air Conditioning	4.00	Spring 2027 Prereq: ME115 HVAC Fundamentals, or ME116 Commercial Refrigeration.
Electives				
		Semester Total:	**17.00**	

Semester 3 - Fall				
Complete	**Course ID**	**Course Title**	**Credit Hours**	**Notes**

Required Courses				
	ME112	Heating System Fundamentals	3.00	Fall 2026, Spring 2027
	TR100	Technical Math	3.00	Fall 2026, Spring 2027
Electives				
	HVAC Technical Electives		3.00	
		Semester Total:	**9.00**	

Total Credits: 42.00

*Semester offerings reflect the current academic year.

HVAC Technical Electives			
Course ID	**Course Title**	**Credit Hours**	**Notes**
AE105	Industrial Wiring	3.00	
AE200	Variable Frequency Drives and Electric Motors	3.00	Fall 2026, Spring 2027 Prereq: ME110 Fundamentals of Motor Controls.
AE202	Actuator/Sensor Systems	3.00	Fall 2026, Spring 2027 Prereq: AE155 Electrical Maintenance.
AE205	Intermediate Programmable Logic Controllers	3.00	Fall 2026, Spring 2027 Prereq: AE150 Programmable Logic Controllers.
AE250	Distributed/Integrated Control Systems	3.00	Spring 2027 Prereq: AE200 Variable Frequency Drives & Electric Motors, or AE205 Industrial PLCs.
AE252	Control Systems Development	3.00	Fall 2026, Spring 2027 Prereq: AE200 Variable Frequency Drives & Electric Motors, or AE205 Industrial PLCs.
AE255	Industrial Robotics	3.00	Spring 2027 Prereq: AE150 Programmable Logic Controllers.
ME106	Industrial Fluid Power	3.00	Fall 2026, Spring 2027
ME114	Renewable Energy Technology	3.00	
ME118	Renewable Energy Technology Systems Analysis	4.00	Prereq: ME114 Renewable Energy Technology, and AE155 Electrical Maintenance, and ME115 HVAC Fundamentals.
ME124	Renewable Energy Technology Maintenance	4.00	Prereq: ME114 Renewable Energy Technology, and AE155 Electrical Maintenance, and ME115 HVAC Fundamentals.
ME125	Engineering Technology Internship	3.00	
ME129	Mechanical Maintenance Skills	3.00	Fall 2026, Spring 2027
TR120	Work Ethics	2.00	Fall 2026, Spring 2027
WE100	Basic Welding	3.00	Fall 2026, Spring 2027
WE101	Welding Safety	1.00	Fall 2026
WE102	Welding Blueprint Reading	3.00	Fall 2026, Spring 2027
WE104	Shielded Metal Arc Welding	3.00	Fall 2026, Spring 2027
WE105	Shielded Metal Arc Welding II	3.00	Fall 2026, Spring 2027 Prereq: WE104 SMAW w/Grade of C or Higher, or Departmental Consent.
WE106	Cutting Processes for Welding	2.00	Fall 2026
WE110	Gas Metal Arc Welding	3.00	Fall 2026, Spring 2027
WE111	Gas Metal Arc Welding II	3.00	Fall 2026, Spring 2027 Prereq: WE110 Gas Metal Arc Welding w/Grade of C or Higher.
WE112	Gas Tungsten Arc Welding	3.00	Fall 2026, Spring 2027
WE113	Gas Tungsten Arc Welding II	3.00	Spring 2027 Prereq: WE112 GTAW w/Grade of C or Higher.
WE128	Welding Metallurgy	2.00	Fall 2026, Spring 2027
WE209	Welding Fabrication Processes	4.00	Fall 2026 Prereq: Departmental Consent.

Industrial Safety Electives			
Course ID	**Course Title**	**Credit Hours**	**Notes**
★ TR121	General Industrial Safety/OSHA10	1.00	Fall 2026