



Climate & Energy Control Technologies (HVAC)

Student Learning Outcomes

- 1 Communication- The student will demonstrate the ability to communicate effectively using written and/or oral communication.
- 2 Information Literacy- The student will recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information.
- 3 Problem Solving- The student will demonstrate the ability to analyze information and solve problems.
- 4 Workplace Skills - Demonstrates a mastery of workplace skills/soft skills, exhibits initiative, adapts to varied situations

Program Outcomes

- 1 Apply electrical theory to various electrical circuits
- 2 Demonstrate knowledge of electrical components in various HVAC systems.
- 3 Assess heating load and duct design
- 4 Demonstrate proper brazing practices
- 5 Apply control theory
- 6 Troubleshoot and diagnose electrical circuits as they apply to HVAC/R Systems
- 7 Apply Knowledge of refrigeration theory and proper EPA practices

Fall

Course #	Course Title	Credits	Function
ACR 112	HVAC Fundamentals	4	Technical Studies
ACR 113	Electrical Fundamentals	4	Technical Studies
ACR 116	Workplace Skills	1	Technical Studies
ACR 117	Intro to Mechanical Refrigeration	4	Technical Studies
ACR 122	Heating System Fundamentals II	3	Technical Studies
ACR 126	EPA 608	1	Technical Studies
SAF 101	Safety Orientation/OSHA 10	1	Technical Studies
	Technical Electives*	3	Elective
MTH	Math Elective*	3	General Studies

Spring

Course #	Course Title	Credits	Function
ACR 118	Electrical Fundamentals II	3	Technical Studies
ACR 121	Heating System Fundamentals	3	Technical Studies
ACR 124	Advanced Heating Systems	3	Technical Studies
ACR 127	Heat Pumps	4	Technical Studies
ACR 128	Commercial HVAC	4	Technical Studies
ACR 129	Commercial HVAC Lab	4	Technical Studies
	Technical Electives*	1	Elective
ENG 101	Composition I*	3	General Studies

Summer

Course #	Course Title	Credits	Function
ACR 119	Advanced Electrical Theory for HVAC	2	Technical Studies
	Technical Elective*	1	Elective
	Communication Elective*	3	General Studies
	Humanities Elective*	3	General Studies

Technical Electives

Course #	Course Title	Credits	Function
ACR 210	Automation Controls & Sensors		Elective
ACR 220	Building Management Systems (BMS)		Elective
ACR 230	Data Analytics for Building Performance		Elective
ACR 140	Sheet Metal Fabrication I		Elective

ACR 123	Heat Loads and Duct Sizing		Elective
	Social Science Elective*	3	General Studies

Technical Certificate, Climate & Energy Control (HVAC) (Cert C)

Total Credits 50

Fall

Course #	Course Title	Credits	Function
ACR 112	HVAC Fundamentals	4	Technical Studies
ACR 113	Electrical Fundamentals	4	Technical Studies
ACR 116	Workplace Skills	1	Technical Studies
ACR 117	Intro to Mechanical Refrigeration	4	Technical Studies
ACR 122	Heating System Fundamentals II	3	Technical Studies
ACR 126	EPA 608	1	Technical Studies
SAF 101	Safety Orientation/OSHA 10	1	Technical Studies
ACR 210	Automation Controls & Sensors	3	Technical Studies

Spring

Course #	Course Title	Credits	Function
ACR 118	Electrical Fundamentals II	3	Technical Studies
ACR 121	Heating System Fundamentals	3	Technical Studies
ACR 124	Advanced Heating Systems	3	Technical Studies
ACR 127	Heat Pumps	4	Technical Studies
ACR 128	Commercial HVAC	4	Technical Studies
ACR 129	Commercial HVAC Lab	4	Technical Studies
ACR 220	Building Management Systems (BMS)	3	Technical Studies

Summer

Course #	Course Title	Credits	Function
ACR 119	Advanced Electrical Theory for HVAC	2	Technical Studies
ACR 230	Data Analytics for Building Performance	3	Technical Studies

Technical Certificate, Climate & Energy Control (HVAC) (Cert B)

Total Credits 44

Fall

Course #	Course Title	Credits	Function
ACR 112	HVAC Fundamentals	4	Technical Studies

ACR 113	Electrical Fundamentals	4	Technical Studies
ACR 116	Workplace Skills	1	Technical Studies
ACR 117	Intro to Mechanical Refrigeration	4	Technical Studies
ACR 122	Heating System Fundamentals II	3	Technical Studies
ACR 126	EPA 608	1	Technical Studies
ACR 140	Sheet Metal Fabrication I	3	Technical Studies
SAF 101	Safety Orientation/OSHA 10	1	Technical Studies

Spring

Course #	Course Title	Credits	Function
ACR 118	Electrical Fundamentals II	3	Technical Studies
ACR 121	Heating System Fundamentals	3	Technical Studies
ACR 123	Heat Loads and Duct Sizing	2	Technical Studies
ACR 124	Advanced Heating Systems	3	Technical Studies
ACR 127	Heat Pumps	4	Technical Studies
ACR 128	Commercial HVAC	4	Technical Studies
ACR 129	Commercial HVAC Lab	4	Technical Studies