

BUILDING, ENGINEERING & SKILLED TECHNOLOGIES

AIR CONDITIONING, HEATING, AND REFRIGERATION TECHNOLOGY

Air Conditioning, Heating, and Refrigeration Technology Degree: Commercial Refrigeration Track - A35100A

The Air Conditioning, Heating, and Refrigeration Technology curriculum provides the basic knowledge to develop skills necessary to work with residential and light commercial systems. Topics include mechanical refrigeration, heating and cooling theory, electricity, controls, and safety.

AAS degree graduates should be able to assist in the start-up, preventive maintenance, service, repair, and/or installation of residential and light commercial systems and should be able to demonstrate an understanding of system selection and balance and advanced systems.

Program Sequence

Fall Semester

AHR 110	Introduction to Refrigeration	5
AHR 111	HVACR Electricity	3
AHR 112	Heating Technology	4
AHR 180	HVACR Customer Relations	1
AHR 213	HVACR Building Code	2

Spring Semester

AHR 113	Comfort Cooling	4
AHR 114	Heat Pump Technology	4
AHR 133	HVAC Servicing.....	4
	English Elective.....	3
	Major Elective	1

Summer Semester

AHR 115	Refrigeration Systems	2
AHR 125	HVACR Electronics	3
BAT 111	Building Automation Systems.....	2
	Social Science Elective	3

Fall Semester

AHR 211	Residential System Design	3
AHR 212	Advanced Comfort Systems.....	4
AHR 235	Refrigeration Design.....	3
	Math Elective.....	3
	Major Elective	2

Spring Semester

REF 116	Commercial Systems I	4
REF 117	Refrigeration Controls.....	4

Communication Electives

(Select 3 hours from the following courses)	
COM 120	Intro Interpersonal Com
COM 231	Public Speaking
ENG 112	Writing and Research in the Disciplines.....
ENG 114	Professional Research & Reporting.....

English Electives

(Select 3 hours from the following courses)	
ENG 110	Freshman Composition
ENG 111	Writing and Inquiry.....

Humanities Electives

(Select 3 hours from the following courses)	
HUM 110	Technology and Society
HUM 115	Critical Thinking.....

Math Electives

(Select 3 hours from the following courses)	
MAT 110	Math Measurement & Literacy
MAT 121	Algebra/Trigonometry I.....
MAT 171	Precalculus Algebra

Social Science Electives

(Select 3 hours from the following courses):	
PSY 118	Interpersonal Psychology.....
PSY 150	General Psychology.....

Major Electives

(Select 3 hours from the following courses):	
AHR 160	Refrigerant Certification
AHR 250	Heating, Venting, and AC Diagnostics.....
BAT 231	BAS Integration.....
BAT 251	Building Automation Controls
WBL 111DD	Work-Based Learning I
WBL 112DD	Work-Based Learning I

Graduation Requirements 70 Credit Hours

Air Conditioning, Heating, and Refrigeration Technology Degree: Commercial A/C Track - A35100B

Program Sequence

Fall Semester

AHR 110	Introduction to Refrigeration	5
AHR 111	HVACR Electricity.....	3
AHR 112	Heating Technology	4
AHR 180	HVACR Customer Relations	1
AHR 213	HVACR Building Code.....	2

Spring Semester

AHR 113	Comfort Cooling	4
AHR 114	Heat Pump Technology	4
AHR 133	HVAC Servicing.....	4
	English Elective	3
	Major Elective	1

Summer Semester

AHR 115	Refrigeration Systems	2
AHR 125	HVACR Electronics.....	3
BAT 111	Building Automation Systems.....	2
	Social Science Elective	3

Fall Semester

AHR 212	Advanced Comfort Systems	4
AHR 215	Commercial HVAC Controls	2
AHR 250	Heating, Venting, and AC Diagnostics.....	2
	Math Elective	3
	Major Elective	2

Spring Semester

AHR 140	All-Weather Systems	2
AHR 211	Residential System Design.....	3

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AHR 240	Hydronic Heating	2
AHR 245	Chiller Systems	2
	Communication Elective.....	3
	Humanity Elective	3

Communication Electives

(Select 3 hours from the following courses)		
COM 120	Intro Interpersonal Com	3
COM 231	Public Speaking	3
ENG 112	Writing and Research in the Disciplines.....	3
ENG 114	Professional Research & Reporting.....	3

English Electives

(Select 3 hours from the following courses)		
ENG 110	Freshman Composition.....	3
ENG 111	Writing and Inquiry	3

Humanities Electives

(Select 3 hours from the following courses)		
HUM 110	Technology and Society.....	3
HUM 115	Critical Thinking.....	3

Math Electives

(Select 3 hours from the following courses)		
MAT 110	Math Measurement & Literacy	3
MAT 121	Algebra/Trigonometry I	3
MAT 171	Precalculus Algebra	4

Social Science Electives

(Select 3 hours from the following courses):		
PSY 118	Interpersonal Psychology	3
PSY 150	General Psychology	3

Major Electives

(Select 3 hours from the following courses):		
AHR 160	Refrigerant Certification	1
AHR 235	Refrigeration Design.....	3
BAT 231	BAS Integration	4
BAT 251	Building Automation Controls	3
WBL 111DD	Work-Based Learning I.....	1
WBL 112DD	Work-Based Learning I.....	2

Graduation Requirements 71 Credit Hours

Air Conditioning, Heating, and Refrigeration Technology Degree: Building Automation Track - A35100C

Program Sequence

Fall Semester

AHR 110	Introduction to Refrigeration	5
AHR 111	HVACR Electricity	3
AHR 112	Heating Technology	4
AHR 180	HVACR Customer Relations	1
AHR 213	HVACR Building Code	2

Spring Semester

AHR 113	Comfort Cooling	4
AHR 114	Heat Pump Technology.....	4
AHR 133	HVAC Servicing.....	4
	English Elective.....	3
	Major Elective	1

Summer Semester

AHR 115	Refrigeration Systems	2
AHR 125	HVACR Electronics.....	3
BAT 111	Building Automation Systems.....	2
	Social Science Elective	3

Fall Semester

AHR 215	Commercial HVAC Controls	2
BAT 212	BAT Logic and Programming.....	3
BAT 221	BAS Networking.....	3
	Math Elective	3
	Major Elective	2

Spring Semester

AHR 211	Residential System Design.....	3
BAT 231	BAS Integration.....	4
BAT 251	Building Automation Controls	3
	Communication Elective	3
	Humanity Elective	3

Communication Electives

(Select 3 hours from the following courses)		
COM 120	Intro Interpersonal Com	3
COM 231	Public Speaking	3
ENG 112	Writing and Research in the Disciplines	3
ENG 114	Professional Research & Reporting	3

English Electives

(Select 3 hours from the following courses)		
ENG 110	Freshman Composition	3
ENG 111	Writing and Inquiry	3

Humanities Electives

(Select 3 hours from the following courses)		
HUM 110	Technology and Society	3
HUM 115	Critical Thinking	3

Math Electives

(Select 3 hours from the following courses)		
MAT 110	Math Measurement & Literacy	3
MAT 121	Algebra/Trigonometry I	3
MAT 171	Precalculus Algebra	4

Social Science Electives

(Select 3 hours from the following courses):		
PSY 118	Interpersonal Psychology	3
PSY 150	General Psychology	3

Major Electives

(Select 3 hours from the following courses):		
AHR 160	Refrigerant Certification	1
AHR 212	Advanced Comfort Systems	4
AHR 235	Refrigeration Design	3
AHR 250	Heating, Venting, and AC Diagnostics.....	2
WBL 111	Work-Based Learning I	1
WBL 112	Work-Based Learning I	2

Graduation Requirements 70 Credit Hours

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Air Conditioning, Heating, and Refrigeration Technology Diploma - D35100A

Topics include mechanical refrigeration, heating and cooling theory, electricity, controls, and safety. The diploma program covers air conditioning, furnaces, heat pumps, tools and instruments.

Diploma graduates should be able to assist in the start-up, preventive maintenance, service, repair, and/or installation of residential and light commercial systems.

Program Sequence

Fall Semester

AHR 110	Introduction to Refrigeration	5
AHR 111	HVACR Electricity.....	3
AHR 112	Heating Technology.....	4
AHR 180	HVACR Customer Relations	1
AHR 213	HVACR Building Code	2

Spring Semester

AHR 113	Comfort Cooling	4
AHR 114	Heat Pump Technology.....	4
AHR 133	HVAC Servicing.....	4
	English Elective.....	3
	Major Elective	1

Summer Semester

AHR 115	Refrigeration Systems	2
AHR 125	HVACR Electronics	3
BAT 111	Building Automation Systems.....	2
	Social Science Elective	3

English Electives

(Select 3 hours from the following courses)

ENG 110	Freshman Composition	3
ENG 111	Writing and Inquiry	3

Social Science Electives

(Select 3 hours from the following courses):

PSY 118	Interpersonal Psychology	3
PSY 150	General Psychology	3

Major Electives

(Select 1 hour from the following courses):

AHR 160	Refrigerant Certification.....	1
AHR 212	Advanced Comfort Systems.....	4
AHR 235	Refrigeration Design.....	3
AHR 250	Heating, Venting, and AC Diagnostics	2
WBL 111DD	Work-Based Learning I.....	1
WBL 112DD	Work-Based Learning I.....	2

Graduation Requirements 41 Credit Hours

Air Conditioning, Heating, and Refrigeration Technology Evening Certificate - C35100B

Topics include mechanical refrigeration, heating and cooling theory, electricity, controls, and safety. The certificate program covers air conditioning, furnaces, tools, and instruments. Certificate graduates should be able to assist in the start-up, preventive maintenance, service, repair, and/or installation of residential systems.

Program Sequence

Fall Semester

AHR 110	Introduction to Refrigeration	5
AHR 111	HVACR Electricity.....	3
AHR 112	Heating Technology.....	4

Spring Semester

AHR 180	HVACR Customer Relations	1
AHR 213	HVACR Building Code.....	2

Graduation Requirements 15 Credit Hours

Building Automation Certificate – C35100E

The Air Conditioning, Heating, and Refrigeration Technology Building Automation Certificate is designed for individuals interested in the basics of how to implement building automation controls within the commercial HVAC context. Topics include HVACR electricity, electronics, system design, automation, and energy management concepts.

Program Sequence

Summer Semester

BAT 111	Building Automation Systems.....	2
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Fall Semester

AHR 111	HVACR Electricity.....	3
BAT 212	BAT Logic and Programming	3
BAT 221	BAS Networking.....	3

Spring Semester

BAT 231	BAS Integration.....	4
BAT 251	Building Automation Controls	3

Graduation Requirements 18 Credit Hours

Commercial Refrigeration Certificate – C35100F

The Air Conditioning, Heating, and Refrigeration Technology Commercial Certificate is designed for individuals wishing to learn about commercial refrigeration systems. Topics covered in this certificate program include basic refrigeration processes used in mechanical refrigeration and air conditioning systems, electricity, the fundamentals of heating, hydronic heating systems, and the fundamentals of liquid chilling equipment. Certificate graduates should be able to assist in the startup, preventive maintenance, service, repair, and installation of commercial systems.

Program Sequence

Fall Semester

AHR 110	Introduction to Refrigeration	5
AHR 235	Refrigeration Design	3

Spring Semester

AHR 115	Refrigeration Systems	2
REF 116	Commercial Systems I.....	4
REF 117	Refrigeration Controls.....	4

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Graduation Requirements 18 Credit Hours

Commercial A/C Certificate – C35100G

Program Sequence

Spring Semester

AHR	110	Introduction to Refrigeration	.....	5
AHR	112	Heating Technology	.....	4

Fall Semester

AHR	212	Advanced Comfort Systems	.....	4
AHR	240	Hydronic Heating	.....	2
AHR	245	Chiller Systems	.....	2

Graduation Requirements 17 Credit Hours

Residential Advanced Certificate – C35100H

Program Sequence

Spring Semester

AHR	113	Comfort Cooling	.....	4
AHR	114	Heat Pump Technology	.....	4
AHR	133	HVAC Servicing	.....	4

Fall Semester

AHR	180	HVACR Customer Relations	.....	1
AHR	213	HVACR Building Code	.....	2

Graduation Requirements 15 Credit Hours