

HEATING, VENTILATION, AIR CONDITIONING & REFRIGERATION
AAS DEGREE

The **HVACR Contractor degree** is intended to provide the technical and business skills required to be successful as an HVACR Contractor. This degree requires 64 credits in program requirements and general education in the courses listed below.

Field of Study Code: HVACR.AAS.CONTRA

Program Requirements	46
Hvacr 1100 Refrigeration Principles	3
Hvacr 1105 Introduction to Safety, Materials & Equipment	3
Hvacr 1108 Refrigerant Certification	1
Hvacr 1110 Introduction to Electricity and HVACR Controls	3
Hvacr 1161 Introduction to Sheet Metal	2
Hvacr 1181 Heating Principles	3
Hvacr 2180 Residential and Light Commercial Forced-Air Heating	3
Hvacr 2201 Residential Air Conditioning	3
Hvacr 2202 Commercial Air Conditioning	3
Hvacr 2210 Commercial Refrigeration	5
Hvacr 2220 Installation	3
Hvacr 2225 Troubleshooting System	3
Hvacr 2240 Load Calculations and Duct Design	5
Hvacr 2260 Heating and Air Conditioning Contracting	3
Manag 2210 Principles of Management	3
General Education	18 to 22
(In addition to the courses listed above.)	
Total Credits Required	64 to 68

AAS DEGREE

The **Heating, Air Conditioning and Refrigeration Service Technician degree** offers training in current technology for diagnosing, servicing, repairing, installing and maintaining heating, air conditioning, refrigeration and energy systems. There are emphases in both residential and commercial HVACR to allow students to create their own career pathways. This degree requires a minimum of 64 credits in program requirements, program electives and general education in the courses listed below.

Field of Study Code: HVACR.AAS.HVAC

Program Requirements	33
Hvacr 1100 Refrigeration Principles	3
Hvacr 1105 Introduction to Safety, Materials & Equipment	3
Hvacr 1108 Refrigerant Certification	1
Hvacr 1110 Introduction to Electricity and HVACR Controls	3
Hvacr 1161 Introduction to Sheet Metal	2
Hvacr 1181 Heating Principles	3
Hvacr 2180 Residential and Light Commercial Forced-Air Heating	3
Hvacr 2186 Hydronic Heating	3
Hvacr 2201 Residential Air Conditioning	3
Hvacr 2202 Commercial Air Conditioning	3
Hvacr 2220 Installation	3
Hvacr 2225 Troubleshooting System	3
Program Electives	13
Select at least thirteen credits from HVACR course(s). Students may choose to focus elective coursework by focusing on Residential or Commercial Service by taking emphasis courses. Students may also choose general electives in any HVACR courses. (In addition to the courses listed above.)	

Emphases Courses
Residential Service

Hvacr 2232 Energy Audits/Economics	2
Hvacr 2240 Load Calculations and Duct Design	5
Hvacr 2260 Heating and Air Conditioning Contracting	3

Commercial Service

Hvacr 2210 Commercial Refrigeration	5
Hvacr 2236 Central Cooling Plants	3
Hvacr 2250 System Balancing	3

General Education

18 to 22

(In addition to the courses listed above.)

Total Credits Required..... **64 to 68**

AAS DEGREE

The **Facility Maintenance Mechanic degree** is designed for the individual seeking a career in Facility Maintenance. The degree prepares students for commercial and industrial facility maintenance employment. There are emphases in both commercial and industrial HVACR to allow students to create their own career pathways. This degree requires a minimum of 64 credits in program requirements, electives and general education in the courses listed below.

Field of Study Code: HVACR.AAS.MAINT
Program Requirements..... 31

Hvacr 1100	Refrigeration Principles	3
Hvacr 1105	Introduction to Safety, Materials & Equipment.....	3
Hvacr 1108	Refrigerant Certification	1
Hvacr 1110	Introduction to Electricity and HVACR Controls.....	3
Hvacr 1181	Heating Principles.....	3
Hvacr 2110	Facility Electrical Systems	3
Hvacr 2186	Hydronic Heating.....	3
Hvacr 2187	Central Heating Plants.....	3
Hvacr 2202	Commercial Air Conditioning.....	3
Hvacr 2236	Central Cooling Plants	3
Hvacr 2242	Mechanical Systems	3

Program Electives 15

Select at least 15 credits from HVACR courses or the other courses as specified under the Emphasis Courses options. Students may also choose to focus elective coursework by focusing on Commercial or Industrial Maintenance by taking emphasis courses. Students may also choose general electives in any HVACR courses. (In addition to the courses listed above.)

Emphases Courses
Commercial Facility Maintenance

Hvacr 2210	Commercial Refrigeration.....	5
Hvacr 2230	HVACR Control Systems.....	3
Hvacr 2231	Building Automation Control Devices	3
Hvacr 2250	System Balancing	3

Industrial Maintenance

Hvacr 2241	Industrial Air Conditioning Design	3
Elmec 1190	Introduction to Programmable Logic Controllers.....	3
Manuf1151	Machine Shop I.....	3
Weld 1100	Welding I	3

General Education 18 to 22

(In addition to the courses listed above.)

Total Credits Required 64 to 68
CERTIFICATE

The **Energy Audit and Analysis certificate** is designed for Heating, Ventilation & Air Conditioning (HVAC) and building inspection contractors to expand their services to include residential and light commercial energy audits and additional services. This certificate requires 10 credits in the courses listed below.

Field of Study Code: HVACR.CER.ENERG
Total Credits Required 10

Hvacr 2232	Energy Audits/Economics	2
Hvacr 2240	Load Calculations and Duct Design	5
Hvacr 2260	Heating and Air Conditioning Contracting	3

CERTIFICATE

The **Service Technician certificate** prepares students for entry-level positions in the HVACR industry. This certificate requires 33 credits in the courses listed below.

Field of Study Code: HVACR.CER.HVAC
Total Credits Required 33

Hvacr 1100	Refrigeration Principles	3
Hvacr 1105	Introduction to Safety, Materials & Equipment.....	3
Hvacr 1108	Refrigerant Certification.....	1
Hvacr 1110	Introduction to Electricity and HVACR Controls.....	3
Hvacr 1161	Introduction to Sheet Metal.....	2
Hvacr 1181	Heating Principles.....	3
Hvacr 2180	Residential and Light Commercial Forced-Air Heating.....	3
Hvacr 2186	Hydronic Heating.....	3
Hvacr 2201	Residential Air Conditioning	3
Hvacr 2202	Commercial Air Conditioning.....	3
Hvacr 2220	Installation	3
Hvacr 2225	Troubleshooting Systems	3

CERTIFICATE

The **Stationary Operator certificate** is designed for the individual seeking a career in Facility Maintenance. The certificate prepares students for commercial and industrial Facility Maintenance. This certificate requires 31 credits in the courses listed below.

Field of Study Code: HVACR.CER.STATOP

Total Credits Required	31
Hvacr 1100 Refrigeration Principles	3
Hvacr 1105 Introduction to Safety, Materials & Equipment	3
Hvacr 1108 Refrigerant Certification	1
Hvacr 1110 Introduction to Electricity and HVACR Controls	3
Hvacr 1181 Heating Principles	3
Hvacr 2110 Facility Electrical Systems	3
Hvacr 2186 Hydronic Heating	3
Hvacr 2187 Central Heating Plants	3
Hvacr 2202 Commercial Air Conditioning	3
Hvacr 2236 Central Cooling Plants	3
Hvacr 2242 Mechanical Systems	3

CERTIFICATE

The **Building Automation Systems (BAS) certificate** prepares a student for an entry level building or energy controls technician position. This certificate requires 37 credits in the courses listed below.

Field of Study Code: HVACR.CER.SYSTM

Total Credits Required	37
Hvacr 1100 Refrigeration Principles	3
Hvacr 1105 Introduction to Safety, Materials and Equipment	3
Hvacr 1108 Refrigerant Certification	1
Hvacr 1110 Introduction to Electricity and HVACR Controls	3
Hvacr 1181 Heating Principles	3
Hvacr 2202 Commercial Air Conditioning	3
Hvacr 2230 HVACR Control Systems	3
Hvacr 2231 Building Automation Control Devices	3
Hvacr 2233 Building Automation Systems with Object-Oriented Programming I	3
Hvacr 2234 Building Automation Systems with Object-Oriented Programming II	3
Hvacr 2235 Building Commissioning	3
Hvacr 2237 Building Automation Systems Solutions	3
Hvacr 2238 Building Automation System Integration with Open Protocols	3