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 HVAC 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 HVAC 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

Hvacr 1105 Introduction to Safety, Materials & Equipment .................................................. 3
Hvacr 1108 Refrigerant Certification ...................................... 1
Hvacr 1110 Introduction to Electricity and HVAC 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
Program Requirements .................................................31
Hvacr 1100  Refrigeration Principles ......................3
Hvacr 1105  Introduction to Safety, Materials & Equipment ............3
Hvacr 1108  Refrergant Certification .......................1
Hvacr 1110  Introduction to Electricity and HVAC 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 HVAC 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 HVAC 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

CERTIFICATE

The Service Technician certificate prepares students for entry-level positions in the HVAC 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  Refrergant Certification .......................1
Hvacr 1110  Introduction to Electricity and HVAC 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. This 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  Refrergant Certification .......................1
Hvacr 1110  Introduction to Electricity and HVAC 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

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<td>Hvacr 1100</td>
<td>Refrigeration Principles</td>
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<tr>
<td>Hvacr 1105</td>
<td>Introduction to Safety, Materials and Equipment</td>
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<td>Hvacr 1108</td>
<td>Refrigerant Certification</td>
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<tr>
<td>Hvacr 1110</td>
<td>Introduction to Electricity and HVACR Controls</td>
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<td>Hvacr 1181</td>
<td>Heating Principles</td>
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<td>Hvacr 2202</td>
<td>Commercial Air Conditioning</td>
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</tr>
<tr>
<td>Hvacr 2230</td>
<td>HVACR Control Systems</td>
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<td>Hvacr 2231</td>
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<td>Building Automation Systems with Object-Oriented Programming II</td>
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<td>Hvacr 2238</td>
<td>Building Automation System Integration with Open Protocols</td>
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