

Heating, Ventilation, Air Conditioning and Refrigeration Certificates

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 and 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 degree course track 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 and 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.SYSTEM

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 Advanced Controls	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

Contact Information:

If you are considering this program as an area of study, please contact the **Business & Applied Technology Division** office at 630-942-2592.

Program web site:

<http://www.cod.edu/academics/programs/hvacr/>