

# CONSTRUCTION TECHNOLOGY - RENEWABLE ENERGY TECHNOLOGY - HVAC/ R, CERTIFICATE OF ACHIEVEMENT (LEVEL II)

## NMC Code 066

This certificate is designed for someone with introductory interest or for someone who is currently working in the HVAC/R career field and wants to enhance their job prospects. With a very narrow focus on the fundamentals of renewable energy, the specific applications as related to HVAC/R, and a few HVAC/R courses, the individual who completes this certificate will greatly enhance their job market skills. Information: (231) 995-2777.

Within this degree students will have the opportunity to earn the following: Mechanical Contractor License.

## Requirements Certificate Requirements

Course	Title	Credits
MTH 111 or MTH 120	Intermediate Algebra Mathematical Explorations	3-4
CAR 100	Introductory Craft Skills	2
EGY 105	Sustainable Building Design	3
EGY 115	Residential Energy Efficiency	3
EGY 145	Geothermal Technology	3
HVA 101	Introduction to HVAC/R	3
HVA 106	Fundamentals of Heating	3
HVA 122	Refrigeration Fundamentals	3
HVA 126	Residential and Commercial A/C	3
HVA 132	Commercial A/C & Refrigeration	3
HVA 136	EPA Certification	3
Approved Construction Technology Elective		3
<b>Total Credits</b>		<b>35-36</b>

## Approved Electives

Course	Title	Credits
CAR 101	Introduction to Carpentry	3
CAR 102	Intro to Woodworking	3
CAR 103	Construction Blueprint Reading	3
CAR 105	Foundations and Framing	3
CAR 121	Exterior Construction	3
CAR 125	Interior Construction <sup>1</sup>	3
CMT 107	Construction Supervision	4
CMT 207	Construction Cost Estimating <sup>1</sup>	3
EET 103	Electrical Studies I <sup>1</sup>	3
EET 204	Electrical Studies II <sup>1</sup>	3
EET 221	Industrial Controls <sup>1</sup>	3

EET 232	Programmable Logic Controllers <sup>1</sup>	3
EET 233	PLC Applications I <sup>1</sup>	3
EET 234	PLC Applications II <sup>1</sup>	3
EGY 105	Sustainable Building Design	3
EGY 115	Residential Energy Efficiency	3
EGY 145	Geothermal Technology <sup>1</sup>	3
ELE 101	Introduction to Electrical	3
ELE 105	Beg Residential Electrical <sup>1</sup>	3
ELE 110	Electrical Code Studies I <sup>1</sup>	3
ELE 111	Electrical Code Studies II <sup>1</sup>	3
ELE 121	Adv Residential Electrical <sup>1</sup>	3
ELE 125	Pre-Commercial Electrical <sup>1</sup>	3
ELE 131	Commercial Electrical <sup>1</sup>	3
ELE 135	Adv Commercial Electrical <sup>1</sup>	3
ELE 142	Industrial Electrical <sup>1</sup>	3
ELE 146	Adv. Industrial Electrical <sup>1</sup>	3
HVA 101	Introduction to HVAC/R	3
HVA 106	Fundamentals of Heating <sup>1</sup>	3
HVA 122	Refrigeration Fundamentals <sup>1</sup>	3
HVA 126	Residential and Commercial A/C <sup>1</sup>	3
HVA 132	Commercial A/C & Refrigeration <sup>1</sup>	3
HVA 136	EPA Certification <sup>1</sup>	3
PLU 101	Introduction to Plumbing	3
PLU 105	Plumbing Components <sup>1</sup>	3
PLU 121	Commercial Plumbing <sup>1</sup>	3
PLU 125	Plumbing Installation <sup>1</sup>	3
UAS 141	Remote Pilot Flight	3
SVR 111	Intro to Field Surveying	2
SVR 112	Intro to Surveying Data Use	3
UAS 211	Commercial Drone Operations <sup>1</sup>	3
UAS 241	Advanced Drone Operations <sup>1</sup>	3

<sup>1</sup>

Denotes courses with required prerequisites.

## Course Sequence Guide

Course	Title	Credits
<b>Year 1</b>		
<b>Fall</b>		
CAR 100	Introductory Craft Skills	2
HVA 101	Introduction to HVAC/R	3
HVA 106	Fundamentals of Heating	3
EGY 115	Residential Energy Efficiency (Fall only)	3
<b>Credits</b>		<b>11</b>
<b>Spring</b>		
MTH 111 or MTH 120	Intermediate Algebra or Mathematical Explorations	3-4
HVA 122	Refrigeration Fundamentals	3
HVA 126	Residential and Commercial A/C	3
Approved Construction Technology Elective		3
<b>Credits</b>		<b>12-13</b>

**Year 2**

**Fall**

EGY 105	Sustainable Building Design (Fall only)	3
EGY 145	Geothermal Technology	3
HVA 132	Commercial A/C & Refrigeration	3
HVA 136	EPA Certification	3
<b>Credits</b>		<b>12</b>
<b>Total Credits</b>		<b>35-36</b>

The responsibility for determining the transferability of this degree and courses to another institution is the sole responsibility of the student.