

# KELLOGG COMMUNITY COLLEGE

## INDUSTRIAL HEATING, VENTILATION, AIR CONDITIONING AND REFRIGERATION COURSE OPTIONS

FALL 2024

Certificate: 25 credits

Associate in Applied Science: 60 credits (combination of industrial HVAC-R, technical electives, and general education credit requirements)

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Module Subject Code and Number	Module Title	Credit	Contact Hours	Lab Fees	Tuition	Total Cost
<input type="checkbox"/> INHR C910-7201	HVAC-R ORIENTATION		2	0.00	0.00	0.00
The orientation must be completed at the RMTTC in Battle Creek prior to registration. Please call 269.965.4137 to verify available orientation times.						
<b>UNIT 05</b>		<b>REFRIGERATION TOOLS/PLANT SAFETY</b>				
<input type="checkbox"/> INHR 05011-7201	HVAC-R SAFETY	0.83	20	41.00	227.01	268.01
<input type="checkbox"/> INHR 05021-7201	HVAC-R TOOLS	0.08	2	31.00	21.88	52.88
		<b>UNIT TOTAL</b>	<b>0.91</b>	<b>22</b>	<b>72.00</b>	<b>248.89</b>
<b>UNIT 10</b>		<b>REFRIGERATION FUNDAMENTALS</b>				
<input type="checkbox"/> INHR 10011-7201	INTRODUCTION TO HVAC-R	0.33	8	55.00	90.26	145.26
<input type="checkbox"/> INHR 10021-7201	TRADE MATHEMATICS	0.42	10	16.00	114.87	130.87
<input type="checkbox"/> INHR 10031-7201	COPPER PLASTIC PIPING PRACTICE	0.21	5	26.00	57.44	83.44
<input type="checkbox"/> INHR 10041-7201	SOLDERING AND BRAZING	0.33	8	44.00	90.26	134.26
<input type="checkbox"/> INHR 10051-7201	FERROUS METAL PIPING PRACTICES	0.63	15	31.00	172.31	203.31
		<b>UNIT TOTAL</b>	<b>1.92</b>	<b>46</b>	<b>172.00</b>	<b>525.14</b>
<b>UNIT 12</b>		<b>ELECTRICAL FUNDAMENTALS FOR HVAC/R</b>				
<input type="checkbox"/> INHR 12011-7201	ELEC SAFETY & HAZARD AWARENES	0.33	8	41.00	90.26	131.26
<input type="checkbox"/> INHR 12021-7201	BASIC ELEC THEORY & TERMINOLGY	0.67	16	41.00	183.25	224.25
<input type="checkbox"/> INHR 12031-7201	BASIC ELECTRICAL CIRCUITS	0.50	12	46.00	136.75	182.75
<input type="checkbox"/> INHR 12041-7201	ELECTRICAL MEASUREMENT	0.50	12	46.00	136.75	182.75
<input type="checkbox"/> INHR 12051-7201	CIRCUIT ANALYSIS	1.00	24	46.00	273.50	319.50
<input type="checkbox"/> INHR 12061-7201	INDUCTANCE & CAPACITANCE	0.67	16	46.00	183.25	229.25
<input type="checkbox"/> INHR 12071-7201	COMBINATION CIRCUITS	0.50	12	11.00	136.75	147.75
<input type="checkbox"/> INHR 12081-7201	TRANSFORMERS	0.50	12	11.00	136.75	147.75
<input type="checkbox"/> INHR 12091-7201	FUSES & CIRCUIT BREAKERS	0.25	6	16.00	68.38	84.38
<input type="checkbox"/> INHR 12101-7201	RELAYS & CONTACTORS	0.25	6	16.00	68.38	84.38
<input type="checkbox"/> INHR 12111-7201	MAGNETISM AND AC FUNDAMENTALS	0.50	12	16.00	136.75	152.75
<input type="checkbox"/> INHR 12121-7201	ELECTRIC MOTORS & CONTROLS	0.50	12	16.00	136.75	152.75
<input type="checkbox"/> INHR 12131-7201	SYMBOLS AND WIRING DIAGRAMS	0.50	12	16.00	136.75	152.75
		<b>UNIT TOTAL</b>	<b>6.67</b>	<b>160</b>	<b>368.00</b>	<b>1,824.27</b>
<b>UNIT 15</b>		<b>REFRIGERATION SYSTEMS &amp; COMPONENTS</b>				
<input type="checkbox"/> INHR 15011-7201	INTRODUCTION TO COOLING	1.25	30	16.00	341.88	357.88
<input type="checkbox"/> INHR 15021-7201	COMPRESSORS	0.63	15	23.00	172.31	195.31
<input type="checkbox"/> INHR 15031-7201	REFRIGERANTS AND OILS	0.42	10	24.00	114.87	138.87
<input type="checkbox"/> INHR 15041-7201	METERING DEVICES	0.33	8	16.00	90.26	106.26
<input type="checkbox"/> INHR 15051-7201	LEAK EVAC RECOVERY CHARGING	0.83	20	71.00	227.01	298.01
<input type="checkbox"/> INHR 15061-7201	TROUBLESHOOTING COOLING	0.83	20	27.00	227.01	254.01
<input type="checkbox"/> INHR 15071-7201	RETAIL REFRIGERATION SYSTEMS	0.83	20	31.00	227.01	258.01
<input type="checkbox"/> INHR 15081-7201	COMMERCIAL INDUSTRIAL REFRIG	1.00	24	18.00	273.50	291.50
		<b>UNIT TOTAL</b>	<b>6.12</b>	<b>147</b>	<b>226.00</b>	<b>1,673.85</b>
<input type="checkbox"/> *INHR C410-7201	EPA CERTIFICATION (STUDENT MUST ARRANGE DATE/TIME WITH INSTRUCTOR.)		3	90.00	0.00	90.00
<b>UNIT 20</b>		<b>HEATING SYSTEMS &amp; TROUBLESHOOTING</b>				
<input type="checkbox"/> INHR 20011-7201	INTRODUCTION TO HEATING	0.63	15	21.00	172.31	193.31

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<b>UNIT 20 HEATING SYSTEMS &amp; TROUBLESHOOTING (CONTINUED)</b>						
<input type="checkbox"/> INHR 20021-7201	TROUBLESHOOTING GAS HEATING	0.54	13	24.00	147.69	171.69
<input type="checkbox"/> INHR 20031-7201	TROUBLESHOOTING OIL HEAT SYS	0.42	10	21.00	114.87	135.87
<input type="checkbox"/> INHR 20041-7201	CHIMNEYS, VENTS AND FLUES	0.21	5	16.00	57.44	73.44
<input type="checkbox"/> INHR 20051-7201	TROUBLESHOOTING ACCESSORIES	0.42	10	21.00	114.87	135.87
<b>UNIT TOTAL</b>		<b>2.22</b>	<b>53</b>	<b>103.00</b>	<b>607.18</b>	<b>710.18</b>
<b>UNIT 25 HYDRONIC SYSTEMS</b>						
<input type="checkbox"/> INHR 25011-7201	INTRODUCTION HYDRONIC SYSTEMS	0.42	10	16.00	114.87	130.87
<input type="checkbox"/> INHR 25021-7201	COMMERCIAL HYDRONIC SYSTEMS	0.54	13	16.00	147.69	163.69
<b>UNIT TOTAL</b>		<b>0.96</b>	<b>23</b>	<b>32.00</b>	<b>262.56</b>	<b>294.56</b>
<b>UNIT 30 STEAM SYSTEMS</b>						
<input type="checkbox"/> INHR 30011-7201	STEAM SYSTEMS	0.63	15	24.00	172.31	196.31
<b>UNIT TOTAL</b>		<b>0.63</b>	<b>15</b>	<b>24.00</b>	<b>172.31</b>	<b>196.31</b>
<b>UNIT 35 HEAT PUMPS &amp; TROUBLESHOOTING</b>						
<input type="checkbox"/> INHR 35011-7201	HEAT PUMPS	0.83	20	16.00	227.01	243.01
<input type="checkbox"/> INHR 35021-7201	TROUBLESHOOTING HEAT PUMPS	0.54	13	19.00	147.69	166.69
<b>UNIT TOTAL</b>		<b>1.37</b>	<b>33</b>	<b>35.00</b>	<b>374.70</b>	<b>409.70</b>
<b>UNIT 40 AIR DISTRIBUTION &amp; INDOOR AIR QUALITY</b>						
<input type="checkbox"/> INHR 40011-7201	INDOOR AIR QUALITY	0.63	15	23.00	172.31	195.31
<input type="checkbox"/> INHR 40021-7201	AIR DISTRIBUTION SYSTEMS	0.63	15	19.00	172.31	191.31
<input type="checkbox"/> INHR 40031-7201	COMMERCIAL AIRSIDE SYSTEMS	0.54	13	23.00	147.69	170.69
<input type="checkbox"/> INHR 40041-7201	AIR QUALITY EQUIPMENT	0.33	8	16.00	90.26	106.26
<input type="checkbox"/> INHR 40051-7201	SYSTEM BALANCING	0.83	20	23.00	227.01	250.01
<b>UNIT TOTAL</b>		<b>2.96</b>	<b>71</b>	<b>104.00</b>	<b>809.58</b>	<b>913.58</b>
<b>UNIT 45 HVAC-R AUTOMATION CONTROLS</b>						
<input type="checkbox"/> INHR 45011-7201	DIGITAL CONTROLS HVAC TECHS	0.21	5	91.00	57.44	148.44
<input type="checkbox"/> INHR 45021-7201	BUILDING MANAGEMENT SYSTEMS	0.75	18	16.00	205.13	221.13
<b>UNIT TOTAL</b>		<b>0.96</b>	<b>23</b>	<b>107.00</b>	<b>262.57</b>	<b>369.57</b>
<b>UNIT 50 HVAC-R DUCT SYSTEMS</b>						
<input type="checkbox"/> INHR 50011-7201	SHEET METAL DUCT SYSTEMS	0.42	10	49.00	114.87	163.87
<input type="checkbox"/> INHR 50021-7201	FIBERGLASS FLEXIBLE DUCT SYS	0.21	5	16.00	57.44	73.44
<b>UNIT TOTAL</b>		<b>0.63</b>	<b>15</b>	<b>47.00</b>	<b>172.31</b>	<b>237.31</b>
<b>UNIT 55 HVAC-R PREVENTATIVE MAINTENANCE</b>						
<input type="checkbox"/> INHR 55011-7201	INSTALLATION AND MAINTENANCE	0.92	22	16.00	251.62	267.62
<input type="checkbox"/> INHR 55021-7201	PLANNED MAINTENANCE	0.83	20	29.00	227.01	256.01
<input type="checkbox"/> INHR 55031-7201	CONSTRUCTION DRAWINGS SPECIFI	1.04	25	18.00	284.44	302.44
<b>UNIT TOTAL</b>		<b>2.79</b>	<b>67</b>	<b>63.00</b>	<b>763.07</b>	<b>826.07</b>

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<b>UNIT 60 HVAC-R COMMISSIONING &amp; CONSERVATION</b>						
<input type="checkbox"/> INHR 60011-7201	SYSTEM STARTUP AND SHUTDOWN	0.96	23	21.00	262.56	283.56
<input type="checkbox"/> INHR 60021-7201	HEATING COOLING SYSTEM DESIGN	1.04	25	24.00	284.44	308.44
<input type="checkbox"/> INHR 60031-7201	ENERGY CONSERVATION EQUIPMENT	0.42	10	21.00	114.87	135.87
<input type="checkbox"/> INHR 60041-7201	ALTERNATIVE HEAT COOL SYSTEMS	0.42	10	24.00	114.87	138.87
<b>UNIT TOTAL</b>		<b>2.84</b>	<b>68</b>	<b>90.00</b>	<b>776.74</b>	<b>866.74</b>
<b>UNIT 65 WATER TREATMENT</b>						
<input type="checkbox"/> INHR 65011-7201	WATER TREATMENT	0.42	10	48.00	114.87	162.87
<b>UNIT TOTAL</b>		<b>0.42</b>	<b>10</b>	<b>48.00</b>	<b>114.87</b>	<b>162.87</b>
<b>UNIT 70 SUPERVISORY SKILLS</b>						
<input type="checkbox"/> INHR 70011-7201	INTRO TO SUPERVISORY SKILLS	0.63	15	41.00	172.31	213.31
<b>UNIT TOTAL</b>		<b>0.63</b>	<b>15</b>	<b>41.00</b>	<b>172.31</b>	<b>213.31</b>
<b>UNIT 75 WRITING FOR EMPLOYMENT</b>						
<input type="checkbox"/> INHR 75011-7201	WRITING FOR EMPLOYMENT	0.50	12	6.00	136.75	142.75
<b>UNIT TOTAL</b>		<b>0.50</b>	<b>12</b>	<b>6.00</b>	<b>136.75</b>	<b>142.75</b>
<b>TOTAL</b>		<b>32.53</b>	<b>785</b>	<b>1,628.00</b>	<b>8,897.10</b>	<b>10,543.10</b>

\*Module(s) cannot be paid for using certain types of financial aid. Please direct all inquiries to the staff at the RMTC registration desk.

**FOR OFFICE USE ONLY**

Instructor Approval \_\_\_\_\_ Date \_\_\_\_\_

Total Credit \_\_\_\_\_ Total Contact \_\_\_\_\_ Total Cost \_\_\_\_\_