

**Minnesota North College - Hibbing Campus**  
**Heating and Cooling Technician**

**Academic Year 2023-24**  
**Diploma (35 credits)**

<b>FALL SEMESTER 2023 – 18 Credits</b>		<b>CREDITS</b>	<b>HOURS LEC/LAB</b>
HCT 1501	Introduction to Electricity	4	3/2
HCT 1525	Tools and Equipment	3	1/4
HCT 1535	Gas Heating Systems	5	2/6
HCT 1541	Oil Heating Systems	3	1/4
HCT 1546	Radiant Heating Systems	2	1/2
HCT 1555	Indoor Air Quality	1	0/2
<b>SPRING SEMESTER 2024 – 17 Credits</b>			
HCT 1505	Refrigeration Theory	3	2/2
HCT 1520	Refrigerant Certification	2	2/0
HCT 1530	Air Conditioning & Heat Pump Systems	5	2/6
HCT 1550	Applied Refrigeration Technology	4	2/4
COMM 1400	Communication for Career Success	3	3/0

**PROGRAM DESCRIPTION**

The HCT Program prepares graduates for careers as mechanics in the heating, ventilation, air-conditioning and refrigeration (HVACR) industry. Students train to install, troubleshoot, and maintain residential and light commercial heating, cooling and refrigeration equipment.

**PROGRAM OUTCOMES**

Upon completion of the Heating and Cooling Technician program the graduate will be able to demonstrate entry-level competencies in the following areas of the HVAC trade:

1. safe working practices with electricity, compressed gasses, and general / trade-specific hand and power tools,
2. work as a team member to complete projects related to Heating, Ventilation and Air Conditioning (HVAC),
3. interpret equipment electrical schematics,
4. effectively troubleshoot high & low voltage controls and system components,
5. perform mechanical repairs, and
6. install, diagnose, and adjust fuel gas components & refrigeration systems

**ARTICULATION AGREEMENTS**

- Bemidji State University – Applied Engineering
- Minnesota State University, Moorhead – Operations Management (Technical Management)

**PROGRAM NOTES**

- Differential tuition is assessed for the HCT courses.

**EMPLOYMENT OPPORTUNITIES**

Demand remains high for qualified HVACR Mechanics nationwide. Because the maintenance, repairs and replacement of existing systems is essential, this career field is more resilient to economic downturns than many others.

HCT Program graduates can apply their training to many different careers in the HVACR Industry. Field mechanics / installers, facilities maintenance (hospitals, office buildings, nursing homes, etc.), building management / controls, system design, equipment manufacturing, and sales are just a few options open to graduates with HVACR backgrounds.

## Heating and Cooling Technician Diploma

### Page 2

#### PROGRAM FACULTY

Spotts, Clinton <[clinton.spotts@minnesotanorth.edu](mailto:clinton.spotts@minnesotanorth.edu)>

---

#### **MISSION**

*Minnesota North College prepares lifelong learners and engaged citizens through inclusive, transformative experiences reflecting the character and natural environment of the region.*



**Minnesota North College, a member of Minnesota State, is an affirmative action, equal opportunity employer and educator.**  
*This document is available in alternate formats upon request by going to [www.MinnesotaNorth.edu](http://www.MinnesotaNorth.edu) to obtain the contact information of your home campus Accessibility Services coordinator.*

**AASC Approval Date: 11-01-2021**  
**Document Updated: 11-08-2023**