

KALAMAZOO VALLEY COMMUNITY COLLEGE  
RELATED TRADE INSTRUCTION  
**HVAC TECHNICIAN**

<u>COURSES</u>	<u>DESCRIPTION</u>	<u>CONTACT HOURS</u>	<u>CREDIT HOURS</u>
MATH 092	BASIC TECH MATH	48	3
MATH 106	TECH MATH 1	64	4
MSM 102	BASICS OF MECH. TECH.	32	2
HVAC 114	BASIC ELEC. FOR HVAC CONTROLS	48	2
HVAC 115	ELEC. FOR HVAC SYSTEMS II	48	2
HVAC 116	ELEC. FOR HVAC SYS III	48	2
HVAC 120	REFRIGERATION I	48	2
HVAC 121	REFRIGERATION II	48	2
HVAC 122	REFRIGERATION III	48	2
HVAC 205	HEATING CONCEPTS & SYSTEMS I	48	2
HVAC 206	HEATING CONCEPTS & SYSYEMS II	48	2
HVAC 207	HEATING CONCEPTS & SYS. III	48	2
HVAC 210	HVAC/R CONTROLS I	64	3
HVAC 220	AIR CONDITIONING SYSTEMS	64	3
HVAC 125	EPA RECOVERY/CERTIFICATION	16	1
<b>TOTAL HOURS</b>		<b>720</b>	<b>34</b>
OPTIONS :			
WELD 120	INTRODUCTION TO WELDING	112	3
HVAC 141	SHEET METAL LAYOUT I	80	3
HVAC 143	SHEET METAL LAYOUT II	80	3
HVAC 215	HYDRONIC HEATING	48	2
HVAC 209	OIL BURNERS	48	2
HVAC 105	HEAT LOAD CALCULATION	48	3
HVAC 110	DUCT & HYDRONIC SYS. DESIGN	32	2

## HEATING-AND-AIR-CONDITIONING INSTALLER - SERVICER

Installs, services, and repairs environmental control systems in residences, department stores, office buildings, and commercial establishments, utilizing knowledge of refrigeration theory, pipefitting, and structural layout: Mounts compressor and condenser units on platform or floor, using handtools, following blueprints or engineering specifications. Fabricates, assembles, and installs ductwork and chassis parts, using portable metalworking tools and welding equipment (DUCT INSTALLER (construction; mfd. bldgs.)869.664-014). Installs evaporator unit in chassis or in air duct system, using handtools. Cuts and bends tubing to correct length and shape, using cutting and bending equipment and tools. Cuts and threads pipe, using machine-threading or hand-threading equipment. Joins tubing or pipe to various refrigerating units by means of sleeves, couplings, or unions, and solders joints, using torch, forming complete circuit for refrigerant (PIPE FITTER(construction) 862.281-018). Installs expansion and discharge valves in circuit. Connects motors, compressors, temperature controls, humidity controls, and circulating-ventilation fans to control panels and connects control panels to power source (ELECTRICIAN (construction) 824.261-010). Installs air and water filters in completed installation. Injects small amount of refrigerant into compressor to test systems, and adds Freon gas to build up prescribed operating pressure. Observes pressure and vacuum gauges and adjusts controls to ensure efficient operation. Tests joints and connections for gas leaks, using gauges or soap-and-water solution. Wraps pipes in insulation batting and secures them in place with cement or wire bands. Replaces defective breaker controls, thermostats, switches, fuses, and electrical wiring to repair installed units using electrician's handtools and test equipment. May install, repair, and service air-conditioner, ranging from fifteen to twenty tons cooling capacity, in warehouses and factory buildings and be designated Air-Conditioning Mechanic, Industrial (any industry).

Kalamazoo Valley Community College  
Apprenticeship Department

SUGGESTED SCHEDULE OF WORK EXPERIENCE  
For

<b>HVAC TECHNICIAN APPRENTICES</b>
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APPROXIMATE HOURS

1. Equipment troubleshooting	_____
2. Operation and repair of systems	_____
3. Controls operation and maintenance	_____
4. Installation of new systems	_____
5. Design review	_____
6. Pumps and piping	_____
7. Welding	_____
8. Testing and balancing	_____
9. Refrigeration - troubleshooting and operation	_____
10. Related instructions	_____
	Total _____