

# RESIDENTIAL HVAC



## One-Year Embedded Technical Diploma

### 31-601-1

HVAC/R is one of the fastest growing industries in the world today. With the changing laws involving refrigerants, there is a constant need for qualified service and installation technicians to work on residential HVAC equipment.

This program will provide proper training for people interested in a career in the residential/light commercial heating, ventilation, and air conditioning (HVAC) field. The technician will be prepared for employment in maintaining, servicing and installing HVAC systems for residential/light commercial applications. The most modern equipment, test instruments, and computers are used for instruction.

After completing the Residential HVAC one year Technical Diploma program, students may wish to pursue an Associates Degree in AIR CONDITIONING AND REFRIGERATION TECHNOLOGY. Credits earned in the 1 year technical diploma are associate level courses and can be applied to the Associate Degree.

Pathway Certificates and Embedded Technical Diplomas are part of a larger model of BTC's Career Pathways that link related academic programs in sequence. Each program offers direct job preparation and a path to the next level of academic programming.

#### Program Outcomes:

- Install HVAC components.
- Service HVAC systems
- Troubleshoot HVAC systems.

#### Semester 1

601-116	A/C Safety, Tools, Thermal Dynamics and HVAC Terminology	1	<b>Credits</b>
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601-117	A/C Components, Refrigeration Cycle and Refrigeration Gauges	1
601-118	Air Flow Fundamentals	1
601-121	Electrical Safety, Meter Usage and Ohm's Law	1
601-122	Parallel Circuits, Combination Circuits and Capacitors	1
601-123	Electrical Services, Wire Sizing and Electrical Diagrams	1
601-131	Access Valves, Compressors and Condensers	1
601-132	Evaporators, Metering Devices and Accessories	1
601-146	Flaring, Swagging and Soldering Copper Pipe	1
601-147	Air Acetylene and Oxy-Acetylene Brazing Copper Pipe	1
804-113	College Technical Mathematics 1A	3

**Credits** **13**

#### Semester 2

601-136	Split Phase Motor Identification, Testing and Replacement	1
601-137	Variable Speed Motors, Current Relays, Potential Relays and PTC Relays	1
601-138	Transformers, Contactors, Relays and Motor Starters	1
601-141	Gas Pipe Sizing, Gas Regulators and Gas Valves	1
601-142	Residential Gas Furnaces	1

601-148	Refrig Recov, Deep Evac and Charging of Residential, Light Commercial, Geothermal and Ice Mach Equip	1
601-149	Refrig Recovery, Triple Evacuation and Charging of Heat Pumps and Refrig Equipment and EPA Test	1
601-151	Residential Split and Light Commercial Package Gas/Electric Cooling Applications	1
601-152	Residential Air-to-Air and Geothermal Heat Pump Systems Cooling Applications	1
601-171	Residential Split System Gas and Refrigeration Pipe Installation	1
601-172	Residential Split System Duct and Controls System Installation and Start-up	1
601-176	Residential Oil Heat, Dual Fuel Systems and Two Stage Heat Pump Heating Applications	1
601-177	Mini-Split, Light Commercial Gas/Electric Package and Unit Heater Heating Applications	1
<b>Credits</b>		<b>13</b>
<b>Total Credits</b>		<b>26</b>