HEATING & COOLING SERVICE PROFESSIONAL

Program Description
The Heating Cooling Service Professional program combines course work from the HVACR Systems Servicing and HVAC Installation & Residential Service programs to create an AAS degree. This six semester, three-year program provides graduates seeking employment in the HVACR field with cross functional entry level skills in two distinct areas of expertise in the HVAC community. Students gain the theoretical knowledge and hands-on skills required to safely install, service, and maintain HVACR residential and commercial equipment, controls, and ductwork. Students learn residential system design, mechanical and fuel gas code requirements, sheet metal pattern development and fabrication skills, installation techniques, troubleshooting and repair of residential and commercial HVACR equipment, and maintenance requirements for an energy efficient operation.

In addition, students gain oral and written communication skills, computer literacy, advanced computational skills, customer relations, and critical thinking skills through Arts & Sciences and technical course work.

Dunwoody College of Technology: a non-profit, private technical college since 1914.

Credential Earned | AAS Degree
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Classes Offered | Day
Length of Program | 3 years (6 semesters)
Available Starts | Fall Semester; Spring Semester
Accreditation | HVAC Excellence
Further Study | Bachelor’s Completion Degree in Construction Management

Degree Requirements
HEAT110 HVAC Ducts & Fittings
HEAT1120 Transitional Fittings
HEAT1130 HVAC Trunk-line Construction
HEAT1140 Fundamentals of Pattern Development
HEAT1150 Advanced Pattern Development
HEAT1210 HVAC Electrical I
HEAT1220 Heating Systems I
HEAT1230 Residential Controls I
HEAT1240 Basic Motor Technology
HEAT1250 Cooling Systems I
HEAT2110 Heating Systems II
HEAT2120 Cooling Systems II
HEAT2130 HVAC Electrical II
HEAT2140 Heating Systems III
HEAT2150 Cooling Systems III
HEAT2210 Welding Fundamentals
HEAT2220 Residential HVAC Design
HEAT2230 Residential HVAC Installation
HEAT2240 Commercial Blueprint Reading
SERV2110 Domestic Refrigeration Service
SERV2120 Commercial Refrigeration Service I
SERV2130 Commercial Refrigeration Service II
SERV2140 HVAC Control Concepts
SERV2210 HVAC Systems Servicing I
SERV2220 HVAC Systems Servicing II
SERV2230 Building Systems Operations I
SERV2240 HVAC Systems Servicing III
SERV2250 Building Systems Operations II
MATH1050 Algebra, Trigonometry & Geometry
Humanities Elective
Natural Sciences Elective
Social Sciences Elective
Communication Elective
COMM1150 Interpersonal Communication
Diversity Elective

How to Apply
- dunwoody.edu
- 612.374.5800
- info@dunwoody.edu

** Data reflects placement for AY2013-14 graduates indicating employment in their field of study within 6 months following graduation. Full data calculations are available for review during College open hours Monday through Friday 8 a.m. to 4 p.m. CT at Career Services or contact rthomson@dunwoody.edu.
AY:2015-16 Revised: 3.05.15

**HEAT1210 Heating Systems I**
Basic fundamentals and terminology pertaining to heat transfer. Thermal environmental science properties. Latent and sensible heat, conduction, convection and radiation. Fundamental psychrometrics. Air distribution, room air movement characteristics and the fundamentals of balancing air systems. Analyzing static, velocity and total pressure along with airflow measurements within ductwork.
HEAT2240 Commercial Blueprint Reading
Architectural, structural, civil, electrical and mechanical blueprint reading with a major emphasis on heating, ventilation, and air conditioning systems contained within these plans. Duct construction, hangers and dampers evaluated according to specification and SMACNA requirements. Make drawings using AutoCAD: 2-D drafting commands for HVAC drafting.

SERV2110 Domestic Refrigeration Service
The mechanical refrigeration cycle of domestic refrigeration equipment will be analyzed and serviced to provide optimum operation. Refrigeration system component installation, analysis, check-out, repairs and maintenance. System start-up, internal and external control troubleshooting and analyzing. Operations of various control systems utilized in high temperature refrigeration. Job safety.

SERV2120 Commercial Refrigeration Service I
Air-cooled and water-cooled refrigeration systems. System component analysis, repair and replacement. Methods of defrost, system start up; internal and external control troubleshooting and analyzing; electrical and electronic-control systems. Mechanical refrigeration cycle troubleshooting. Job safety.

SERV2123 Commercial Refrigeration Service II
Process chilled water and supermarket systems control, operation and energy management. Safety, both personal and equipment. Daily operation and preventive maintenance. Hands-on analysis and replacement of refrigeration system components. Analyze refrigeration controls. Screw and centrifugal chiller operation leading to year-round system operation.

SERV2140 HVAC Control Concepts
Fundamentals of HVAC control. Formations including pneumatic, electric, electronic, DDC and building energy management systems as they pertain to troubleshooting. Application of control systems of individual room, zone air distribution, variable frequency drivers, air handlers, chillers and boilers. Damper control including economizer cycles in conjunction with indoor air quality. Safety, both personal and equipment.

SERV2210 HVAC Systems Servicing I
Energy management systems. Interfacing HVAC air handlers with energy sources in heating and cooling modes. Psychrometrics, start up and operation of industrial burners and their controls. System fail safe parameters. Analyzing outdoor air control parameters coordinating between energy efficiencies and desirable indoor air qualities. Make up and exhaust systems. DX and chilled water systems and component operation check out, analysis, repair and replacement. Control modes of various HVAC functions. System start up and check out procedures. Gas and mechanical codes. Safety, both personal and equipment.

SERV2220 HVAC Systems Servicing II
Heat loss/heat gain calculations. Individual HVAC components sized and selected. Analysis of the control systems serving HVAC systems. Service and replacement/repair procedures for various ventilating and exhaust systems, and their requirements and controls. Make up air units, along with hands-on adjustment of these systems and their controls. Building codes are applied. Safety, both personal and equipment.

SERV2230 Building Systems Operations I
Layout and construction of common sheet metal components found in building HVAC&R systems. Retrofitting skills with a working knowledge of the Uniform Mechanical Code. Welding skills with a focus on oxyacetylene. Safety issues emphasized.

SERV2240 HVAC Systems Servicing III
Steam accessories and codes regulating them, with emphasis on the Minnesota Boiler Examination. Hands-on analyzing control systems serving these HVAC systems. Steam systems and components. Constant volume HVAC systems. Blowers, filters, cooling coils, heating coils, air blenders and mixing boxes. Energy management systems. Individual HVAC components sized and selected along with single line designs of constant volume and multi zone systems. Low and high pressure steam, boilers and their systems. Steam/ hot water fan coil units. Safety, both personal and equipment.

SERV2250 Building Systems Operations II
Start up, check out, troubleshoot, diagnose, repair and replace various HVAC wet and dry systems and components. Roof top unit (RTU) start up and check out. Final check outs of various systems used in commercial installations. Operational reports. Control systems. Energy management systems. Preventive maintenance schedules of HVAC equipment. Plumbing, fire-protection and snow melting systems analyzed. Safety, both personal and equipment.

MATH1050 Algebra, Trigonometry & Geometry
Principles of algebra, geometry and trigonometry used in the context of a technical setting. Problem-solving strategies are developed and applied to technology.

COMM1150 Interpersonal Communication
Analyze the process of interpersonal communication as a dynamic and complex system of interactions. Integrate interpersonal communication theory into work, family and social relationships. Apply fundamental tools needed to provide quality customer service. Decision making, problem solving, and managing customer service processes are emphasized.