

# HEATING, VENTILATING & AIR CONDITIONING

## HVAC Major

### ASSESSMENT OF STUDENT LEARNING

Measures	Gen Ed #1	Gen Ed #2	Gen Ed #3	Gen Ed #4	Gen Ed #5	Program #1	Program #2	Program #3	Program #4
E-portfolio	X		X						
CAAP	X	X							
Student Satisfaction Survey	X	X	X						
Advisory Board Survey	X	X	X						
EPA Cert.						x			
Welding and Brazing Cert.	X	X		X					
<i>REF 1100 Basic Refrigeration</i>	X	X		X			x		X
<i>REF 2160 Air Conditioning Systems</i>	X	X		X			x	x	X
<i>REF 2500 Troubleshooting Capstone</i>	X	X		X			x	x	
<i>REF 1350 Refrigeration III</i>	X	X		X		x	x	x	

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## GENERAL EDUCATION LEARNING OUTCOMES

1. **Communicate effectively**
2. **Evaluate arguments in a logical fashion**—Competence in analysis and logical argument are explicit learning goals for most general education programs, although these skills go by a variety of names (e.g., critical thinking, analysis, logical thinking, etc.). **Students will be able to demonstrate competence in problem solving in communication, mathematics, and in team settings.**
3. **Demonstrate an understanding of cultural differences and the knowledge of how to work effectively in a global and diverse culture and society.**
4. **Employ the methods of inquiry characteristic of natural sciences, social sciences, mathematics, and the arts and humanities;** general education introduces students to methods of inquiry in several fields of study and thereby prepares students to integrate information from different disciplines.
5. **Engage in our democratic society**—one of the overarching goals of general education is to prepare students to be active and informed citizens; the development of a disposition to participate in and contribute to our democracy is of equal importance to the goal of having the skills to do so intelligently.

**Learning Outcomes 1-3 will be measured for all students** through the CAAP assessment (Writing, Mathematics, and Critical Thinking) and through the e-portfolio (Writing and Cultural Diversity). Outcomes 1 and 2 will also be assessed through course and program assessment for applied degree programs.

**Learning Outcomes 1-5 will be assessed in specific courses included in the Transfer Module.**

## **Program Specific Outcomes and Goals**

1. Be certifiable in National Refrigerant Transition and Recovery procedures by passing the national EPA mandated exam.
2. Demonstrate the ability to understand and apply theoretical and practical knowledge of residential heating and air conditioning systems, and light commercial refrigeration systems for service work and installation.
3. Demonstrate an understanding of the application and calibration of HVAC and refrigeration control systems.
4. Demonstrate the ability to design and fabricate sheet metal ductwork systems and their basic components.