Sinclair Community College
444 E. Third St.
Dayton, OH 45402

Master Syllabus

HVA 1201 - Basic HVAC Systems with Cooling

Division: Science, Mathematics and Engineering

Department: Heating Ventilation & Air Conditioning

Credit Hour Total: 3.0 **Lecture Hrs:** 2.0 **Lab Hrs:** 2.0

Date Revised: June 2014

Course Description:

Basic concepts and theory of heating, ventilating, air conditioning and refrigeration systems. Foundations in the applications of cooling principles in light commercial equipment. Major components include refrigerant flow through equipment, applications of equipment to the refrigeration cycle, heat transfer fundamentals and preparation for the Environmental Protection Agency (EPA) refrigerant handler's certification exam. Two classroom, two lab hours per week.

General Education Outcomes:

- Critical Thinking/Problem Solving

Course Outcomes:

Air conditioning
Explain how refrigeration is applied to air conditioning.

Assessment Method: Locally developed exams
Performance Criteria: 70% or higher correct responses

Air distribution
Describe the use of air systems to meet heating and cooling requirements.

Assessment Method: Locally developed exams
Performance Criteria: 70% or higher correct responses

Heating systems
Describe the basic principles of operation and required equipment for electric, gas and oil heating systems.

Assessment Method: Locally developed exams
Performance Criteria: 70% or higher correct responses

System components and accessories
Explain the purpose and operation of the major components of a refrigeration system.

Assessment Method: Locally developed exams
Performance Criteria: 70% or higher correct responses

Refrigeration cycle
Explain the basic refrigeration cycle and properly install gauges to take basic system readings.

Assessment Method: Behavioral observations
Performance Criteria: Achieve "8" out of 10 points on procedure checklist

Physical properties
Define, measure and interpret basic properties associated with HVAC work.

Assessment Method: Locally developed exams
Performance Criteria: 70% or higher correct responses

Outline:

Heat transfer, matter and energyAir distributionElectric, gas and oil heat familiarizationRefrigeration cycle and refrigerantsFunction of major components and accessories within the systemRefrigeration applied to air conditioningLow pressure refrigerationSafety considerations for the technicianEnvironmental protectionPreparation for the EPA Refrigerant Handler's Certification Exam