

## Master Syllabus

### HVA 1261 - HVAC Loads & Distribution for Small Buildings

**Division:** Science, Mathematics and Engineering

**Department:** HVAC-R Engineering Technology

**Credit Hour Total:** 4.0

**Lecture Hrs:** 2.0 **Lab Hrs:** 4.0

**Prerequisite(s):** DEV 0015AND MAT 0100OR MAT 1110OR MAT 1130OR MAT 1445

**Date Revised:** October 2016

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#### Course Description:

A discussion and demonstration of the importance of proper air distribution systems and principles of balanced heat distribution, including design considerations for light commercial applications. Loads will be calculated using commercially available software. Testing, Adjusting and Balancing procedures are included. Two classroom, four labs hours per week.

#### General Education Outcomes:

- ▣ Critical Thinking/Problem Solving Competency
- ▣ Computer Literacy Competency
- ▣ Information Literacy Competency

#### Course Outcomes:

##### Heat distribution problems

Describe problems related to heat distribution.

**Assessment Method:** Locally developed exams  
**Performance Criteria:**

70% or higher on all exams

##### Load and distribution needs

Calculate load and distribution needs.

**Assessment Method:** Locally developed exams  
**Performance Criteria:**

70% or higher on all exams

**Assessment Method:** Simulations  
**Performance Criteria:**

70% or more of available points on computer-calculated loads.

##### Air and water flow formulas

Use air and water flow formulas in a troubleshooting environment.

**Assessment Method:** Locally developed exams  
**Performance Criteria:**

70% or higher on all exams

##### Testing, adjusting, and balancing

Perform basic airside TAB procedures including documentation.

**Assessment Method:** Performance appraisals  
**Performance Criteria:**

70% or higher on all laboratory exercises

##### Equipment

Select equipment for a given application.

**Assessment Method:** Locally developed exams  
**Performance Criteria:**

70% or higher on all exams

##### Basic design tools

Apply basic design tools applicable to heating and cooling systems.

**Assessment Method:** Locally developed exams  
**Performance Criteria:**

70% or higher on all exams

##### Design and installation

Describe proper and improper design and installation practices.

**Assessment Method:** Locally developed exams  
**Performance Criteria:**

70% or higher on all exams

**Outline:**

Light commercial load calculations

Applied psychrometrics

Types of distribution systems found in light commercial installations

Duct and pipe sizing

Proper equipment selection

Testing, Adjusting, and Balancing Procedures and Documentation.