Washtenaw Community College Comprehensive Report

HVA 202 Air System Layout and Design
Effective Term: Fall 2017

Course Cover

Division: Advanced Technologies and Public Service Careers
Department: Heating, Ventilation and A/C
Discipline: Heating, Ventilation, Air Conditioning and Refrigeration
Course Number: 202
Org Number: 14750
Full Course Title: Air System Layout and Design
Transcript Title: Air System Layout and Design
Is Consultation with other department(s) required: No
Publish in the Following: College Catalog , Time Schedule , Web Page
Reason for Submission: Three Year Review / Assessment Report
Change Information:
Consultation with all departments affected by this course is required.
Course description
Outcomes/Assessment
Objectives/Evaluation
Rationale: Course was assessed in Fall 2015 but syllabus was not reviewed
Proposed Start Semester: Fall 2017
Course Description: This course provides an overview of duct systems, airflow, design and analysis of indoor air quality issues. This includes components of air distribution systems, fan principles and sizing, noise troubleshooting and system pressure losses.

Course Credit Hours

Variable hours: No
Credits: 3
Lecture Hours: Instructor: 45 **Student:** 45
Lab: Instructor: 15 **Student:** 15
Clinical: Instructor: 0 **Student:** 0

Total Contact Hours: Instructor: 60 **Student:** 60
Repeatable for Credit: NO
Grading Methods: Letter Grades
Audit
Are lectures, labs, or clinicals offered as separate sections?: NO (same sections)

College-Level Reading and Writing

College-level Reading & Writing

College-Level Math

No Level Required

Requisites

Prerequisite
HVA 101 minimum grade "C"
and

Prerequisite
HVA 103 minimum grade "C"

General Education

Request Course Transfer

Proposed For:
Eastern Michigan University
Ferris State University

Student Learning Outcomes

1. Identify duct systems and industry design standards.
   Assessment 1
   Assessment Tool: A departmental final exam will be used to assess understanding of key concepts
   Assessment Date: Fall 2018
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: All students
   How the assessment will be scored: Answer key
   Standard of success to be used for this assessment: A minimum of 70% of the students should achieve an overall average of 70% or higher.
   Who will score and analyze the data: Departmental faculty

2. Recognize Indoor Air Quality issues and standards.
   Assessment 1
   Assessment Tool: A departmental final exam will be used to assess understanding of key concepts
   Assessment Date: Fall 2018
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: All students
   How the assessment will be scored: Answer key
   Standard of success to be used for this assessment: A minimum of 70% of the students should achieve an overall average of 70% or higher.
   Who will score and analyze the data: Departmental faculty

3. Diagnose airflow problems related to indoor environment and human comfort.
   Assessment 1
   Assessment Tool: A departmental final exam will be used to assess understanding of key concepts
   Assessment Date: Fall 2018
   Assessment Cycle: Every Three Years
   Course section(s)/other population: all sections
   Number students to be assessed: All students
   How the assessment will be scored: Answer key
   Standard of success to be used for this assessment: A minimum of 70% of the students should achieve an overall average of 70% or higher.
   Who will score and analyze the data: Departmental faculty

Course Objectives

1. Identify different duct systems.
2. Explain benefits and shortcomings for different duct systems.

3. Explore indoor air quality issues.
4. Explain industry standards pertaining to IAQ.
5. Test and assess existing duct systems for health and comfort conditions.
6. Identify duct design strategies for human health and comfort.
7. Take basic air pressure measurements.
8. Generate airflow conditions using an airflow duct calculator.
9. Identify different branch duct terminations.
10. Explain procedures for eliminating contamination sources.
11. State reasons for providing humidification in winter months.

New Resources for Course

Course Textbooks/Resources

Textbooks

Meyer, L. *Airflow in ducts*, 96 ed. Lama, 1996
Andrews. *Residential duct diagnostic and repair*, 03 ed. ACCA, 2003
Meyer, L. *Fans and V-belt drives*, 02 ed. Lama, 2007
Rutkowski. *Residential duct systems; Manual D*, 3rd ed. ACCA, 2009

Manuals
Periodicals
Software

Equipment/Facilities

Level III classroom

Reviewer	Action	Date
Faculty Preparer:		
Michael Kontry	*Faculty Preparer*	*Dec 07, 2016*
Department Chair/Area Director:		
Robert Carter	*Recommend Approval*	*Dec 08, 2016*
Dean:		
Brandon Tucker	*Recommend Approval*	*Dec 14, 2016*
Curriculum Committee Chair:		
David Wooten	*Recommend Approval*	*Mar 21, 2017*
Assessment Committee Chair:		
Ruth Walsh	*Recommend Approval*	*Mar 22, 2017*
Vice President for Instruction:		
Kimberly Hurns	*Conditional Approval*	*Mar 23, 2017*