

Course Assessment Report
Washtenaw Community College

Discipline	Course Number	Title
Heating, Ventilation, Air Conditioning and Refrigeration	202	HVA 202 01/26/2017-Air System Layout and Design
Division	Department	Faculty Preparer
Advanced Technologies and Public Service Careers	Heating, Ventilation and A/C	Michael Kontry
Date of Last Filed Assessment Report		

I. Assessment Results per Student Learning Outcome

Outcome 1: Identify duct systems and industry design standards.

- Assessment Plan
 - Assessment Tool: Departmental final exam
 - Assessment Date: Winter 2008
 - Course section(s)/other population: all
 - Number students to be assessed: all
 - How the assessment will be scored:
 - Standard of success to be used for this assessment:
 - Who will score and analyze the data:

1. Indicate the Semester(s) and year(s) assessment data were collected for this report.

Fall (indicate years below)	Winter (indicate years below)	SP/SU (indicate years below)
	2015, 2016	

2. Provide assessment sample size data in the table below.

# of students enrolled	# of students assessed
36	35

3. If the number of students assessed differs from the number of students enrolled, please explain why all enrolled students were not assessed, e.g. absence, withdrawal, or did not complete activity.

1 student in Winter 2015 did not take the final exam

4. Describe how students from all populations (day students on campus, DL, MM, evening, extension center sites, etc.) were included in the assessment based on your selection criteria.

All students selected

5. Describe the process used to assess this outcome. Include a brief description of this tool and how it was scored.

Multiple choice questions from the final exam using an answer key.

6. Briefly describe assessment results based on data collected for this outcome and tool during the course assessment. Discuss the extent to which students achieved this learning outcome and indicate whether the standard of success was met for this outcome and tool.

Met Standard of Success: Yes

Students scored 96.6% on this outcome.

7. Based on your interpretation of the assessment results, describe the areas of strength in student achievement of this learning outcome.

Students exhibited a very good knowledge of the different duct systems and the related industry design standards.

8. Based on your analysis of student performance, discuss the areas in which student achievement of this learning outcome could be improved. If student met standard of success, you may wish to identify your plans for continuous improvement.

Recommend continuing present course of instruction on this area.

Outcome 2: Recognize Indoor Air Quality issues and standards.

- Assessment Plan
 - Assessment Tool: Departmental final exam
 - Assessment Date: Winter 2008
 - Course section(s)/other population: all
 - Number students to be assessed: all
 - How the assessment will be scored:
 - Standard of success to be used for this assessment:

- Who will score and analyze the data:

1. Indicate the Semester(s) and year(s) assessment data were collected for this report.

Fall (indicate years below)	Winter (indicate years below)	SP/SU (indicate years below)
	2016, 2015	

2. Provide assessment sample size data in the table below.

# of students enrolled	# of students assessed
36	35

3. If the number of students assessed differs from the number of students enrolled, please explain why all enrolled students were not assessed, e.g. absence, withdrawal, or did not complete activity.

1 student in Winter 2015 did not take the final exam,.

4. Describe how students from all populations (day students on campus, DL, MM, evening, extension center sites, etc.) were included in the assessment based on your selection criteria.

All students selected

5. Describe the process used to assess this outcome. Include a brief description of this tool and how it was scored.

Multiple choice questions from the final exam using an answer key.

6. Briefly describe assessment results based on data collected for this outcome and tool during the course assessment. Discuss the extent to which students achieved this learning outcome and indicate whether the standard of success was met for this outcome and tool.

Met Standard of Success: Yes
Students scored 95.4% on this outcome.

7. Based on your interpretation of the assessment results, describe the areas of strength in student achievement of this learning outcome.

Students exhibited a strong knowledge of indoor air quality issues and related standards.

8. Based on your analysis of student performance, discuss the areas in which student achievement of this learning outcome could be improved. If student met standard of success, you may wish to identify your plans for continuous improvement.

Recommend continuing present instruction on this area.
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Outcome 3: Diagnose air flow problems related to indoor environment and human comfort.

- Assessment Plan
 - Assessment Tool: Departmental final exam
 - Assessment Date: Winter 2008
 - Course section(s)/other population: all
 - Number students to be assessed: all
 - How the assessment will be scored:
 - Standard of success to be used for this assessment:
 - Who will score and analyze the data:

1. Indicate the Semester(s) and year(s) assessment data were collected for this report.

Fall (indicate years below)	Winter (indicate years below)	SP/SU (indicate years below)
	2016, 2015	

2. Provide assessment sample size data in the table below.

# of students enrolled	# of students assessed
36	35

3. If the number of students assessed differs from the number of students enrolled, please explain why all enrolled students were not assessed, e.g. absence, withdrawal, or did not complete activity.

1 student in Winter 2015 did not take the final exam.

4. Describe how students from all populations (day students on campus, DL, MM, evening, extension center sites, etc.) were included in the assessment based on your selection criteria.

All students selected

5. Describe the process used to assess this outcome. Include a brief description of this tool and how it was scored.

Multiple choice questions from the final exam using an answer key.

6. Briefly describe assessment results based on data collected for this outcome and tool during the course assessment. Discuss the extent to which students achieved this learning outcome and indicate whether the standard of success was met for this outcome and tool.

Met Standard of Success: Yes

Students scored 82.3% on this outcome.

7. Based on your interpretation of the assessment results, describe the areas of strength in student achievement of this learning outcome.

Students exhibited a good knowledge of ductwork pressures and air flow principles.

8. Based on your analysis of student performance, discuss the areas in which student achievement of this learning outcome could be improved. If student met standard of success, you may wish to identify your plans for continuous improvement.

More time could be spent on calculations for correct ductwork sizing and the use of Manual D for sizing residential duct systems.

II. Course Summary and Action Plans Based on Assessment Results

1. Describe your overall impression of how this course is meeting the needs of students. Did the assessment process bring to light anything about student achievement of learning outcomes that surprised you?

Overall understanding of the concepts explained in this course seem above average. The course appears to be meeting students' needs in the areas of importance for residential ductwork design and its related calculations and diagnosing of air flow problems.

2. Describe when and how this information, including the action plan, was or will be shared with Departmental Faculty.

All instructors involved in the HVA 202 course will be verbally informed of this information in a departmental meeting.

3.

Intended Change(s)

Intended Change	Description of the change	Rationale	Implementation Date
No changes intended.			

4. Is there anything that you would like to mention that was not already captured?

No

III. Attached Files

[HVA 202 Outcomes](#)

Faculty/Preparer: Michael Kontry **Date:** 03/21/2017
Department Chair: Robert Carter **Date:** 03/30/2017
Dean: Brandon Tucker **Date:** 03/31/2017
Assessment Committee Chair: Ruth Walsh **Date:** 04/25/2017

Course Assessment Report
Washtenaw Community College

Discipline	Course Number	Title
Heating, Ventilation, Air Conditioning and Refrigeration	202	HVA 202 07/02/2015-Air System Layout and Design
Division	Department	Faculty Preparer
Advanced Technologies and Public Service Careers	Heating, Ventilation and A/C	Michael Kontry
Date of Last Filed Assessment Report		

I. Assessment Results per Student Learning Outcome

Outcome 1: Identify duct systems and industry design standards.

- Assessment Plan
 - Assessment Tool: Departmental final exam
 - Assessment Date: Winter 2008
 - Course section(s)/other population: all
 - Number students to be assessed: all
 - How the assessment will be scored:
 - Standard of success to be used for this assessment:
 - Who will score and analyze the data:

1. Indicate the Semester(s) and year(s) assessment data were collected for this report.

Fall (indicate years below)	Winter (indicate years below)	SP/SU (indicate years below)
	2015, 2014, 2013	

2. Provide assessment sample size data in the table below.

# of students enrolled	# of students assessed
51	47

3. If the number of students assessed differs from the number of students enrolled, please explain why all enrolled students were not assessed, e.g. absence, withdrawal, or did not complete activity.

47 students completed the final exam.

4. Describe how students from all populations (day students on campus, DL, MM, evening, extension center sites, etc.) were included in the assessment based on your selection criteria.

All students were selected.

5. Describe the process used to assess this outcome. Include a brief description of this tool and how it was scored.

Multiple choice questions from final exam related to the outcome using an answer key.

6. Briefly describe assessment results based on data collected for this outcome and tool during the course assessment. Discuss the extent to which students achieved this learning outcome and indicate whether the standard of success was met for this outcome and tool.

Met Standard of Success: Yes

87.2% of the students scored correctly on this outcome. The standard of success was 70% of the students will score 70% or higher.

7. Based on your interpretation of the assessment results, describe the areas of strength in student achievement of this learning outcome.

Students appeared to have a good understanding of the different types of duct systems in the field.

8. Based on your analysis of student performance, discuss the areas in which student achievement of this learning outcome could be improved. If student met standard of success, you may wish to identify your plans for continuous improvement.

An increase in the students' understanding of some of the duct related pressure principles would be desirable.

Outcome 2: Recognize Indoor Air Quality issues and standards.

- Assessment Plan
 - Assessment Tool: Departmental final exam
 - Assessment Date: Winter 2008
 - Course section(s)/other population: all
 - Number students to be assessed: all

- How the assessment will be scored:
- Standard of success to be used for this assessment:
- Who will score and analyze the data:

1. Indicate the Semester(s) and year(s) assessment data were collected for this report.

Fall (indicate years below)	Winter (indicate years below)	SP/SU (indicate years below)
	2015, 2014, 2013	

2. Provide assessment sample size data in the table below.

# of students enrolled	# of students assessed
51	47

3. If the number of students assessed differs from the number of students enrolled, please explain why all enrolled students were not assessed, e.g. absence, withdrawal, or did not complete activity.

47 students completed final exam.

4. Describe how students from all populations (day students on campus, DL, MM, evening, extension center sites, etc.) were included in the assessment based on your selection criteria.

All students were selected.

5. Describe the process used to assess this outcome. Include a brief description of this tool and how it was scored.

Multiple choice questions from final exam related to the outcome using an answer key.

6. Briefly describe assessment results based on data collected for this outcome and tool during the course assessment. Discuss the extent to which students achieved this learning outcome and indicate whether the standard of success was met for this outcome and tool.

Met Standard of Success: Yes
 96.5% of the students scored correctly on this outcome. The standard of success was 70% of the students will score 70% or higher.

7. Based on your interpretation of the assessment results, describe the areas of strength in student achievement of this learning outcome.

Students have a very good grasp on Indoor Air Quality issues.

8. Based on your analysis of student performance, discuss the areas in which student achievement of this learning outcome could be improved. If student met standard of success, you may wish to identify your plans for continuous improvement.

Continue to stress Indoor Air Quality issues as in the past.

Outcome 3: Diagnose air flow problems related to indoor environment and human comfort.

- Assessment Plan
 - Assessment Tool: Departmental final exam
 - Assessment Date: Winter 2008
 - Course section(s)/other population: all
 - Number students to be assessed: all
 - How the assessment will be scored:
 - Standard of success to be used for this assessment:
 - Who will score and analyze the data:

1. Indicate the Semester(s) and year(s) assessment data were collected for this report.

Fall (indicate years below)	Winter (indicate years below)	SP/SU (indicate years below)
	2015, 2014, 2013	

2. Provide assessment sample size data in the table below.

# of students enrolled	# of students assessed
51	47

3. If the number of students assessed differs from the number of students enrolled, please explain why all enrolled students were not assessed, e.g. absence, withdrawal, or did not complete activity.

47 students completed the final exam.

4. Describe how students from all populations (day students on campus, DL, MM, evening, extension center sites, etc.) were included in the assessment based on your selection criteria.

All students were selected.

5. Describe the process used to assess this outcome. Include a brief description of this tool and how it was scored.

Multiple choice questions from final exam related to the outcome using an answer key.

6. Briefly describe assessment results based on data collected for this outcome and tool during the course assessment. Discuss the extent to which students achieved this learning outcome and indicate whether the standard of success was met for this outcome and tool.

Met Standard of Success: Yes

89.7% of the students scored correctly on this outcome. The standard of success was 70% of the students will score 70% or higher.

7. Based on your interpretation of the assessment results, describe the areas of strength in student achievement of this learning outcome.

Students seem to have a very good understanding of the methods to calculate duct system flow.

8. Based on your analysis of student performance, discuss the areas in which student achievement of this learning outcome could be improved. If student met standard of success, you may wish to identify your plans for continuous improvement.

More instruction on the ability of insulation to enhance human comfort would be desirable.

II. Course Summary and Action Plans Based on Assessment Results

1. Describe your overall impression of how this course is meeting the needs of students. Did the assessment process bring to light anything about student achievement of learning outcomes that surprised you?

Students are learning the importance of indoor air quality and how their understanding of airflow related work can impact that quality. We could have a little more time in this course spent stressing the importance of insulation on ductwork.

2. Describe when and how this information, including the action plan, was or will be shared with Departmental Faculty.

Members of the department, especially the instructor for this course, will be informed by direct conversation before the start of the next HVA 202 class.

3.

Intended Change(s)

Intended Change	Description of the change	Rationale	Implementation Date
No changes intended.			

4. Is there anything that you would like to mention that was not already captured?

5.

III. Attached Files

[HVA 202 assessment document](#)

Faculty/Preparer: Michael Kontry **Date:** 07/09/2015

Department Chair: Michael Kontry **Date:** 07/14/2015

Dean: Brandon Tucker **Date:** 08/10/2015

Assessment Committee Chair: Michelle Garey **Date:** 09/21/2015

COURSE ASSESSMENT REPORT

I. Background Information

1. Course assessed:
 Course Discipline Code and Number: **HVA 202**
 Course Title: **Air System Layout and Design**
 Division/Department Codes: **VCT/HVA**

Semester assessment was conducted (check one):

- Fall **2008**
 Winter 20__
 Spring/Summer 20__

2. Assessment tool(s) used: check all that apply.
- Portfolio
 - Standardized test
 - Other external certification/licensure exam (specify):
 - Survey
 - Prompt
 - Departmental exam
 - Capstone experience (specify):
 - Other (specify):

3. Have these tools been used before?
- Yes
 - No

If yes, have the tools been altered since its last administration? If so, briefly describe changes made.

4. Indicate the number of students assessed/total number of students enrolled in the course.

All students in all sections completing the final exam, 13 of 13 students

5. Describe how students were selected for the assessment.

All students taking the final test

II. Results

1. Briefly describe the changes that were implemented in the course as a result of the previous assessment.

N/A

2. List each outcome that was assessed for this report exactly as it is stated on the course master syllabus.

- 1. Identify duct systems, and industry design standards.**
- 2. Recognize Indoor Air Quality issues and standards.**
- 3. Diagnose air flow problems related to indoor environment and human comfort.**

3. Briefly describe assessment results based on data collected during the course assessment, demonstrating the extent to which students are achieving each of the learning outcomes listed above. *Please attach a summary of the data collected.*

Students met the standard of success in all of the above listed outcomes,

COURSE ASSESSMENT REPORT

4. For each outcome assessed, indicate the standard of success used, and the percentage of students who achieved that level of success. *Please attach the rubric/scoring guide used for the assessment.*

Standard of success: 70% of students should achieve an overall average on the assessment questions of 70% or higher.

Percentage of comprehension for objectives 1-3		
1	2	3
79%	92%	88%

5. Describe the areas of strength and weakness in students' achievement of the learning outcomes shown in assessment results.

Strengths: Students displayed a strong grasp of indoor air quality issues and standards.

Weaknesses: Students displayed a weakness on the effect of friction on an air delivery system.

III. Changes influenced by assessment results

1. If weaknesses were found (see above) or students did not meet expectations, describe the action that will be taken to address these weaknesses.

Include a hand-out on friction loss in the first day handouts.

2. Identify intended changes that will be instituted based on results of this assessment activity (check all that apply). Please describe changes and give rationale for change.

a. Outcomes/Assessments on the Master Syllabus
Change/rationale:

b. Objectives/Evaluation on the Master Syllabus
Change/rationale:

c. Course pre-requisites on the Master Syllabus
Change/rationale:

d. 1st Day Handouts
Change/rationale: **Friction loss handout**

e. Course assignments
Change/rationale:

f. Course materials (check all that apply)
 Textbook
 Handouts
 Other:

g. Instructional methods
Change/rationale:

h. Individual lessons & activities
Change/rationale:

3. What is the timeline for implementing these actions? **Fall 2009**

COURSE ASSESSMENT REPORT

IV. Future plans

- 1. Describe the extent to which the assessment tools used were effective in measuring student achievement of learning outcomes for this course.

The use of a standardized departmental final exam made assessing students easy and effective.

- 2. If the assessment tools were not effective, describe the changes that will be made for future assessments.

Assessment tools worked effectively


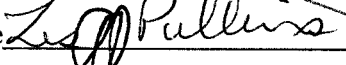

- 3. Which outcomes from the master syllabus have been addressed in this report?

All Selected

If "All", provide the report date for the next full review: Fall 2011.

If "Selected", provide the report date for remaining outcomes: _____

Submitted by:

Print: <u>DANIEL LAWRENCE</u> Faculty/Preparer	Signature: <u></u>	Date: <u>4-15-09</u>
Print: <u>Les Pullins</u> Department Chair	Signature: <u></u>	Date: <u>4-16-09</u>
Print: <u>Bruce Greene</u> Dean/Administrator	Signature: <u></u>	Date: <u>4/20/09</u>

COURSE ASSESSMENT REPORT

Percentage of comprehension for objectives 1-3		
1	2	3
79%	92%	88%

