

**Course Assessment Report**  
**Washtenaw Community College**

Discipline	Course Number	Title
Heating, Ventilation, Air Conditioning and Refrigeration	207	HVA 207 10/05/2016-Commercial Industry Standards with Competency Exams
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 the Michigan Mechanical Code and International Fuel Gas Code when servicing and installing HVAC equipment.

- Assessment Plan
  - Assessment Tool: written departmental final exam
  - Assessment Date: Winter 2016
  - Course section(s)/other population: all
  - Number students to be assessed: all
  - How the assessment will be scored: answer key
  - Standard of success to be used for this assessment: 70% of students will score 70% or higher.
  - Who will score and analyze the data: Department faculty

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, 2014	

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

# of students enrolled	# of students assessed
34	34

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.

All assessed

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 final exam was employed 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 correctly 96% of the time 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 strong ability to reference both the Michigan Mechanical Code and International Fuel Gas Code passages with accuracy.

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.

Emphasis on explanation of the codes and how to locate them in the code manuals will continue as it has proved successful in this outcome.

Outcome 2: Identify commercial refrigeration, commercial air conditioning and residential low pressure hydronic heat systems.

- Assessment Plan

- Assessment Tool: The ESCO Institute's commercial air conditioning, commercial refrigeration and residential low pressure hydronic heat competency test
- Assessment Date: Winter 2016
- Course section(s)/other population: all
- Number students to be assessed: all
- How the assessment will be scored: ESCO electronic scoring
- Standard of success to be used for this assessment: 70% of students will score 70% or higher.
- Who will score and analyze the data: ESCO electronic scoring system

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, 2014	

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

# of students enrolled	# of students assessed
34	34

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.

All students

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.

Third party ESCO "employment ready" tests were used in commercial A/C, commercial refrigeration, and Hydronic low pressure evaluations.

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: <u>Yes</u>
Students scored 70.1% on ESCO commercial A/C test.
Students scored 75.9% on ESCO commercial refrigeration test.
Students scored 71.9% on ESCO Hydronic low pressure test.

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

Students as a whole exceeded standard of success but at the bottom of the scale. Those who did well in the related classes did better on the ESCO exams.
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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.

The standard of success was met but just barely. More review time for the ESCO tests will be conducted and related classes have recently added material found in the ESCO tests. However reviewing some of the questions on the tests, there is some ambiguity as to the correct answers according to the ESCO test writers. We have already taken steps to discuss with them the material in question.
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## 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?

The part of the course that deals with codes seems to be effective in that students are learning the use of code books and how to find the correct answers to service and repair appliances in the HVAC field according to those safety codes.
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The ESCO test scores sometimes are not an accurate indication of what the students learn in the related classes since some test material includes larger and more complex systems than are taught in the class material. However these are the closest third party test available in these areas.
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2. Describe when and how this information, including the action plan, was or will be shared with Departmental Faculty.

All instructors of the HVA 207 class will be verbally informed of these results in a department meeting.
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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

[Summary of data outcomes 1 and 2](#)

**Faculty/Preparer:** Michael Kontry **Date:** 10/06/2016

**Department Chair:** Robert Carter **Date:** 10/06/2016

**Dean:** Brandon Tucker **Date:** 10/09/2016

**Assessment Committee Chair:** Michelle Garey **Date:** 11/02/2016

**COURSE ASSESSMENT REPORT**

**I. Background Information**

1. Course assessed:  
 Course Discipline Code and Number: **HVA 207**  
 Course Title: **Commercial Industry Standards with Competency Exams**  
 Division/Department Codes: **VCT/HVAC**

2. Semester assessment was conducted (check one):

- Fall 20\_\_
- Winter 2009
- Spring/Summer 20\_\_

3. 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):

4. 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.  
 N/A

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

**All students completing the final exams, 6 of 6 students**

6. Describe how students were selected for the assessment.

**All students taking the final tests**

**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 the Michigan Mechanical Code, and the International Fuel Gas Code when servicing and installing HVAC equipment.**

2. **Identify commercial refrigeration, commercial air conditioning, and residential low pressure hydronic heat systems by passing the ESCO exams.**

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.*

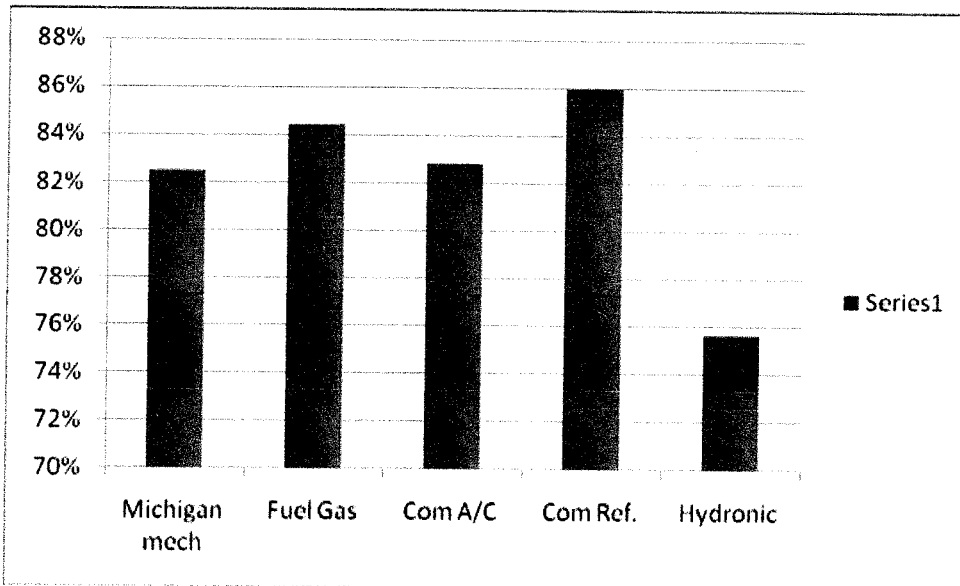
**Students exceeded the standards of success in all above listed outcomes.**

**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.*

70% of students should achieve a score of 70% or higher on the departmental final exam.  
 70% of students should achieve a score of 70% or higher on the ESCO competency exam.

Student Exam Scores HVA 207 Winter 2008				
Outcome 1		Outcome 2		
Michigan Mechanical Code	International Fuel Gas Code	ESCO Commercial A/C	ESCO Commercial Refrigeration	ESCO low pressure Hydronic Heat
83%	84%	83%	86%	76%



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

**Strengths:** Students showed a strong ability to reference the Michigan Mechanical Code, and the International Fuel Gas Code quickly and accurately.

**Weaknesses:** All students were well above the standard of success on all outcomes, but the students showed a slightly lower comprehension rate on the Hydronic heat test.

**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.

A more in depth review before the ESCO Hydronic Exam could be helpful, possibly supplemented by a handout study at home.

**COURSE ASSESSMENT REPORT**

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.  1<sup>st</sup> Day Handouts  
Change/rationale:

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: **Increase review time before students take the ESCO Exam on Hydronic Heating.**

3. What is the timeline for implementing these actions? **Winter 2010**

**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 standardized tests and the departmentally developed final exams made assessing students easy and effective.**

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

**The 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: **Winter 2012.**

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

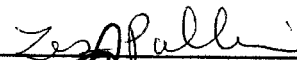
Submitted by:

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Date: 4/16/09

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