



 **SUNY CANTON**

Air Conditioning Maintenance & Repair
School of Engineering Technology
Fall 2015 Assessment Report



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Date of Presentation: 1/15/2016

What was assessed? Student learning outcomes list:

- **SLO 1 (Career Skills) - Gain the skills to begin a career in refrigeration and air conditioning service**
 - Copper tubing fabrication
 - Fundamentals of heat and energy
 - Use of hand tools
 - Refrigeration theory
 - Electrical basics



What was assessed? Student learning outcomes list:

- **SLO 2 (Equipment Installation) - Learn how to install and service refrigeration and air conditioning equipment for residential and commercial buildings.**
 - Brazing and soldering
 - Heating and cooling loads
 - Environmental regulations
 - Troubleshooting
 - Equipment selection



What was assessed? Student learning outcomes list:

- **SLO 3 (Communication Skills) - Learn to communicate properly in the language of equipment installation & service**
 - Terminology
 - Collaboration on Labs (working in a group)



Where were outcomes assessed?

- SLO1 Career Skills

ACHP103 Outcome 1,2,3,4,5

CONS151 Outcome 1,2,3,4,5,6

- SLO2 Equipment Installation

ACHP103 Outcome 1,2,3,4,5,6

CONS151 Outcome 2,3,4,6

- SLO2 Equipment Installation

ACHP103 Outcome 6



How was the assessment accomplished?

- Student work assessed:
 - Midterm and final exam questions
 - Lab work submitted
 - Practical exam performance
- Measurement strategy:
 - % of questions answered correctly exams
 - Functional analysis of work produced (%)
- Sample size:
 - All students (11)



Actual assessment data

SLO1 Career Skills						
Course	Course outcome					Met ?
ACHP103	SLO1	80% of the students achieve 80% on the Lab report.				Met
	SLO2	70% achieve 75% acceptance of the joint analysis by the instructor and ISA				Exeeded
	SLO3	Midterm exam questions 7-8, 80% achieve 80% on both				Not met
	SLO4	Final exam q. 3, 80% achieve 80%				Not met
	SLO5	Final exam q. 1a through 1d, 80% achieve 80%				Met
	SLO6	80% or better grade on Lab 4				Met

Actual assessment data

SLO1 Career Skills						
Course	Course outcome					Met ?
CONS151	SLO1	80% of the students achieve 80% on the Lab report.				Not met
	SLO2	Quiz 2, 75% achieve 75% or better				Not met
	SLO3	Lab 10-2, 75% average for these 2 assignments				Met
	SLO4	Assignment Commercial 1, 75% achieve 75%				Exeeded
	SLO5	Labs 13-1, 13-2, 75% achieve 75%				Met
	SLO6	Plumbing takeoff, 75% achieve 75%				Met

Actual assessment data

SLO2 Equipment installation			
Course	Course outcome		Met ?
ACHP103	SLO1	80% of the students achieve 80% on the Lab report.	Not met
	SLO2	Quiz 2, 75% achieve 75% or better	Not met
	SLO3	Lab 10-2, 75% average for these 2 assignments	Met
	SLO4	Assignment Commercial 1, 75% achieve 75%	Exceeded
	SLO5	Labs 13-1, 13-2, 75% achieve 75%	Met
	SLO6	Plumbing takeoff, 75% achieve 75%	Met

Actual assessment data

SLO2 Equipment installation							
Course	Course outcome					Met ?	
CONS151	SLO2	Quiz 2, 75% achieve 75% or better					Not met
	SLO3	Lab 10-2, 75% average for these 2 assignments					Met
	SLO4	Assignment Commercial 1, 75% achieve 75%					Exceeded
	SLO6	Plumbing takeoff, 75% achieve 75%					Met



Actual assessment data

SLO3 Communication skills								
Course	Course outcome						Met ?	
CONS151	SLO2	Quiz 2, 75% achieve 75% or better						Not met
	SLO3	Lab 10-2, 75% average for these 2 assignments						Met
	SLO4	Assignment Commercial 1, 75% achieve 75%						Exeeded
	SLO6	Plumbing takeoff, 75% achieve 75%						Met



Assessment results: What does the data tell us?

- SLO 1 – Career skills
 - Students struggled the most on:
 - Refrigeration theory & electrical circuits
- SLO 2 – Equipment installation
 - Students struggled the most on:
 - Electrical installation
 - Component identification
- SLO 5 – Communication Skills
 - Students struggled the most on:
 - Terminology (not currently included in assessment)



Data-driven decisions: How the department has or plans to “close the loop” based on these results.

- SLO1 career Skills
 - Increase intensity of refrigeration theory in Lecture and lab sessions, possibly modifying early Lab assignments
 - Add a ladder diagram quiz to the 1st half of the semester, to highlight problem areas



Data-driven decisions: How the department has or plans to “close the loop” based on these results.

- SLO2 Equipment installation
 - Add a component identification Lab assignment
 - Expand single phase power entrance panel Lab assignment



Budget requirement to aid in SLO2 improvement

- SLO2 Equipment installation
 - Budgetary estimate of upgrading our mock service entrance panel to include a 6 station remote disconnect installation station \$750



Data-driven decisions: How the department has or plans to “close the loop” based on these results.

- SLO3 Communication
 - Include CONS151 mapping to this SLO to improve terminology and component identification



Recommendations for assessment process

- Continue to work with this system so that Taskstream produces these reports. It appears that as of now, we will be producing these in 3 formats: Taskstream, Powerpoint, and some other report format.

