



 **SUNY CANTON**

Air Conditioning Engineering Tech.  
Canino School of Engineering Technology  
Fall 2015 Assessment Report



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# Program Goals

- PEO 1 – Ability to work in industry
- PEO 2 – Seek Advanced Education
- PEO 3 – Pursuit of Lifelong Learning

# Operational Goals

- OG 1 – Increase Enrollment
- OG 2 – Seek additional Faculty to teach in ACET
- OG 3 – Increase Retention Rate



# What was assessed? Student outcomes list:

- SO #1. Career Knowledge
- SO #2 Applications
- SO #3. An ability to conduct, analyze and interpret experiments, and apply experimental results to improve processes
- SO #4. An ability to apply creativity in the design of systems, components, or processes
- SO #5. An ability to function effectively on teams
- SO #6. An ability to identify, analyze and solve technical problems
- SO #7. An ability to communicate effectively through written, oral, and graphic methods related to HVAC&R
- SO #8. A recognition of the need for, and an ability to engage in lifelong learning
- SO #9 Ethical, Social Responsibility and Global Issues
- SO # 10. Quality, timeliness, and Continuous Improvement



# Where were outcomes assessed?

- SO #1. Career Knowledge
  - ACHP 264, ACHP 253
- SO #2 Applications
  - MECH 103, ACHP 243
- SO #3. An ability to conduct, analyze and interpret experiments, and apply experimental results to improve processes
  - ACHP 243 and ACHP 253
- SO #4. An ability to apply creativity in the design of systems, components, or processes
  - ACHP 253, ACHP254, and ACHP 243
- SO #5. An ability to function effectively on teams
  - ACHP 253, 243
- SO #6. An ability to identify, analyze and solve technical problems
  - MECH 103, ACHP 243
- SO #7. An ability to communicate effectively through written, oral, and graphic methods related to HVAC&R
  - ENGS 101 and ACHP 253
- SO #8. A recognition of the need for, and an ability to engage in lifelong learning
  - ENGS 101 and ACHP 253
- SO #9 Ethical, Social Responsibility and Global Issues
  - ENGS 101, ACHP 253
- SO # 10. Quality, timeliness, and Continuous Improvement
  - ACHP 253, ACHP254, ACHP 243, ENGS 101, and MECH 103



# How was the course assessment accomplished?

- Student work assessed:
  - Homework questions
  - Calculations exams
  - Lab Reports
  - Oral presentations/ Research papers
- Measurement strategy:
  - rubrics used for oral presentations, research papers, lab reports
  - % of students who answered questions correct with a grade of C or better
- Sample size:
  - All students (1 Sophomore and 5 Freshmen students)



# ABET Student Outcome for ACET

<b>Program Student Outcome</b>	<b>N</b>	<b>Not Met</b>	<b>Met</b>	<b>Exceed</b>	<b>Achieved</b>
<b>SO #1. Career Knowledge</b>	<b>7</b>	<b>0%</b>	<b>0%</b>	<b>100%</b>	<b>YES</b>
ACHP 243, ACHP 253					
<b>S0 #2 Applications</b>	<b>16</b>	<b>0%</b>	<b>25%</b>	<b>75%</b>	<b>YES</b>
ACHP 243, ACHP 253, ACHP 264, MATH 123, MECH 103, PHYS 121, PHYS 125					
<b>SO #3. ...conduct, analyze...improve processes</b>	<b>7</b>	<b>0%</b>	<b>14%</b>	<b>86%</b>	<b>YES</b>
ACHP 243 ACHP 253, PHYS 125					
<b>SO #4. ... creativity in the design of systems, components, or processes</b>	<b>7</b>	<b>0%</b>	<b>0%</b>	<b>100%</b>	<b>YES</b>
ACHP 243, ACHP 253, ACHP254, ACHP 264					
<b>SO #5. An ability to function effectively on teams</b>	<b>5</b>	<b>0%</b>	<b>20%</b>	<b>80%</b>	<b>YES</b>
ACHP 253, 243					



# ABET Student Outcome for ACET

<b>Program Student Outcome</b>	<b>N</b>	<b>Not Met</b>	<b>Met</b>	<b>Exceed</b>	<b>Achieved</b>
<b>SO #6. An ability to identify, analyze and solve technical problems</b>	<b>14</b>	<b>36%</b>	<b>0%</b>	<b>64%</b>	<b>NO</b>
ACHP 243, MECH 103, ELEC 261					
<b>SO #7. An ability to communicate effectively through written, oral, and graphic methods related to HVAC&amp;R</b>	<b>11</b>	<b>0%</b>	<b>27%</b>	<b>73%</b>	<b>YES</b>
ACHP 243, ACHP 253, ENGS 101					
<b>SO #8. A recognition of the need for, and an ability to engage in lifelong learning</b>	<b>1</b>	<b>0%</b>	<b>0%</b>	<b>100%</b>	<b>YES</b>
ACHP 253					
<b>SO #9 Ethical, Social Responsibility and Global Issues</b>	<b>6</b>	<b>17%</b>	<b>0%</b>	<b>83%</b>	<b>YES</b>
ENGS 101, ACHP 253					
<b>SO # 10. Quality, timeliness, and Continuous Improvement</b>	<b>7</b>	<b>0%</b>	<b>0%</b>	<b>100%</b>	<b>YES</b>
ACHP 243, ACHP 253					





# Assessment results:

- SO # 6 – An ability to identify, analyze, and solve technical problems
  - ELEC 261 did not meet its SLOs
  - This course leads to ELEC 141 which is required by ACET students to understand building and equipment controls. This is a major area graduates find work.
  - The remaining courses in ACET achieved a 70% met or exceeded.
- SO # 8 – A recognition of the need ... lifelong learning
  - Only one course directly measuring this
  - Identified by ABET as a short coming of the program



# Data-driven decisions: “close the loop”

- SO # 6 the program will:
  - Discuss with faculty in Electrical about the SLOs measures for ELEC 261 to determine if the correct measures were selected.
  - Second determine if students need assistance in learning this material.
  - Determine if ELEC 261 is the right place to measure SO # 6
- SO # 8 the Program will:
  - Develop new means of assessing this in other course within ACET
  - Make changes to Course Outlines and submit to Curriculum Committee Spring of 2016



# Resources necessary to close the loop:

## – SO # 6

- will require individual faculty time discussing the course
- Inter department review of course needs by programs

## – SO # 8

- will require program faculty time discussing courses to measure “Lifelong Learning”
- Department/ Faculty Assembly approval of courses changes to add SLO for “Lifelong Learning”

- No external funding is necessary beyond faculty time.



# What Learning Occurred Due to Assessment Process?

- Need assessment on Program Goals
- Discovery that programs and courses need to interact to achieve outcomes
- Need common language across all programs and Taskstream
- Don't break software this frustrates Taskstream
- We don't need the campus picture 19 times today

