



 **SUNY CANTON**

Mechanical Engineering Tech. (B.T.)
Canino School of Engineering Technology
Fall 2016 Assessment Report



Curriculum Coordinator: D. Miller

Date of Presentation: 1/18/2017

What was assessed?

The cycle for the MET (BT) program assessment is based upon the calendar year and will include a spring/fall semester sequence:

2016 – Assess SLO#3 (ABET: G) and SLO#4 (ABET E, H, I)

2017 - Assess SLO#1 (ABET: B, C D, F)

2018 – Assess SLO#2 (ABET: A, J, K)



What was assessed?

- **SLO#3 – Communications Skill**

- Demonstrate the ability to effectively present, organize and articulate thoughts, ideas, viewpoints and conclusions both orally and in writing. (This SLO addresses ABET: G)

ABET: G (an ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature)

- **SLO#4 – Inter/Intra Personal Skills**

- Demonstrate an ability to address professional and ethical responsibilities including a respect for diversity; recognize the impact of societal issues within a global context; function effectively as a member or leader of a team; and perform self-reflection of personal growth and achievement. (This SLO addresses ABET: E, H, I)



What was assessed?

- SLO#4 – Inter/Intra Personal Skills

ABET: E (an ability to function effectively as a member or leader on a technical team)

ABET: H (an understanding of the need for and an ability to engage in self-directed continuing professional development)

ABET: I (an understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity)



How was the assessment accomplished?

- Student work assessed: What assignments in what courses-- tests, products of student work, etc.?
- Measurement strategy: scores, rubric, etc.
- Sample size: n students (Is this a sample or all eligible students?)

SLO#3 (Communication Skills)

ABET: G (an ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature)

Course	(I)-Introduce (R)-Reinforce (E)-Emphasize	SO Measured	When	By	Metric	n	Results (>70%)		Reflections and Notes
ENGS101	I	Graphic Communications	F 16	Haskins	Spatial Visualization Homework	43	74%	Met	Look for another method to evaluate this objective
		Memo, Letter, Technical & Oral presentation			1 assignmentment graded for each of the 4 areas	43	56%	Not Met	Many nonsubmissions contributed to not meeting target. In future require a writing center signature as proof they worked with student
MECH112	I	Interpret GD&T	Sp 16	Haskins	Exam Questions	16	69%	Met	Much time was spent on this topic passing on knowledge gained from my training class
		Apply GD&T			CAD Project	23	57%	Not Met	Despite demonstrating ability to interpret GD&T students struggle with correct application on drawings
		Use CAD to produce 3D drawings			CAD Projects	23	80%	Met	Students have no problem using CAD



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SLO#3 (Communication Skills)

ABET: G (an ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature)

MECH220	E	Technical Writing	F 16	Haskins	Full Technical Report	12	67%	Met	4 out of 12 did not submit reports. All 8 submissions exceeded 70%
MECH242	R	Graphical Schematic Diagrams for Fluid Power	Sp 16	Miller	Schematic Diagrams for Final Project	23	83%	Met	4 students did not submit project
		Written Technical and Graphical Communications			Hydraulic Teststand Technical Report	20	70%	Met	Overall quality was very good. 3 students did not submit reports

MECH351	E	Oral & Written Communications	F 16	Miller	Fractional Factorial Experiment Written Report and Oral Presentation	13	100%	Met	All students scored above 2.0 on the AACU Oral Communications Rubric
MECH477	E	Oral & Written Communications	Sp 16	Craig	Capstone Design Project Rubric	8	81%	Met	Performance improved from year ago



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SLO#4 (Inter/Intra Personal Skills)

ABET: E (an ability to function effectively as a member or leader on a technical team)

Course	(I)-Introduce (R)-Reinforce (E)-Emphasize	SO Measured	When	By	Metric	n	Results (>70%)		Reflections and Notes
ENGS101	I	Team Work	F 16	Haskins	Team Survey	42	71%	Met	Self and Peer assessments score self high
MECH128	I	Work in Teams	Sp 16	Craig	Questionnaire/Rubric	23	43%	Not Met	Self and Peer assessments score self high, Faculty Assessment much lower and realistic
MECH242	R	Team Data Collecting	F 16	Miller	Team Lab Report	23	70%	Met	Overall quality of reports were very good
MECH232	R	Present Solutions to Team Project	Sp 16	Miller	Team Design Project	13	53%	Not Met	Lacked motivation or no ability for self direction to research and follow through
MECH477	E	Group Project Presentation	Sp 16	Craig	Capstone Design Project Rubric	8	81%	Met	Performance improved from year ago



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SLO#4 (Inter/Intra Personal Skills)

ABET: H (an understanding of the need for and an ability to engage in self-directed continuing professional development)

Course	(I)-Introduce (R)-Reinforce (E)-Emphasize	SO Measured	When	By	Metric	n	Results (>70%)		Reflections and Notes
SOET 348	R	Earn 10 hours OSHA Certification Online	Sp 16	Haskins	Sign up and complete 10 hour safety course online	36	97%	Met	Only 1 of 36 students did not complete the online certification course
MECH477	E	Perform basic research	Sp 16	Craig	Capstone Design Project Rubric	8	62%	Not Met	Groups lacked sufficient research ability. Plan to add new 1 credit capstone research course as prerequisite to MECH477



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SLO#4 (Inter/Intra Personal Skills)

ABET: I (an understanding of and a commitment to address professional and ethical responsibilities, including a respect for diversity)

Course	(I)-Introduce (R)-Reinforce (E)-Emphasize	SO Measured	When	By	Metric	Results (>70%)			Reflections and Notes
						n			
ENGS101	I	Profession and Responsibilities Thereof	F16	Haskins	Exam	42	67%	Met	Increased the number of inclass examples and results improved this year
SOET377	E	Moral Issues and Respect for code of ethics	Sp 16	Frempong					
SOET377	E	Trust, reliability and respect for diversity	Sp 16	Frempong					
SOET377	E	Global issues	Sp 16	Frempong					



Assessment results: What have the data told us?

- SLO#3 (Communications, ABET G) – A few of the course SLO's are not met in the introductory and reinforcement phase, however at the time of graduation these students have demonstrated their achievement. We will continue to make improvements in the process and adapt to the changing environment which we work within.
- SLO#4 (Inter/Intra Personal Skills, ABET E, H, I) – We have learned students remain weak in their research and independent learning. Most can work well in teams, but are non motivated and do the minimum to get by.



Assessment results: What have the data told us?

- Need more basic research time to improve skills and enhance MECH477 Capstone projects
- Students lack motivational skills (millennial generation issue)
<https://www.youtube.com/watch?v=Ba5F9VmCIQk>
- Not all faculty in department were using the 70% of students achieve 70% or higher target established within department
- Rewrite some course objectives and remap courses for better alignment to program objectives
- Recent data received from Kirk Jones is unreliable. Currently the task of data compilation is very laborious. The process needs to be stream lined our it will die.
- When reviewing student grades, physics lab grades are on average 2 letter grades higher than other course work on student transcripts. Yet students still can not write a lab report when leaving physics lab.



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

- Program change to remove SOET348 and make OSHA 10 hr. Certification graduation requirement
- Add new course MECH377 – Capstone Research to focus on research proposals and give more time for MECH477 project implementation
- Based upon last years findings/student evaluations in MECH242 lab project timing was adjusted to separate more time between the pneumatic and hydraulic test stand reports. Results were much improved this year
- In 2015 the Ethics section of the ENGS101 course only met 50% attainment. Instructor noted his assessment questions were poorly written and would revise for 2016. That was completed and the objective improved to 67% meeting the standard.



What resources were used or have been requested to close the loop?

- **REQUEST:** Restore funding levels appropriate and inline with similar universities and programs so we can maintain equipment and have supplies to conduct labs
- **BUDGET:** Have a supplies budget that is available in August so we can purchase items as we need and take advantage of special offers
- **FACULTY:** We need more faculty so teaching loads are reasonable and inline with other similar programs and universities.



What changes would you make to the Assessment Process?

- **GRANT ACCESS** - 4 Requests have been made to obtain access on Taskstream to courses outside my department (i.e. SOET 116, SOET377, ENGL101, PHYS122 etc.) so I can review the findings and use in my assessment. I still have not been granted access after 9 months of requests. I guess being department chair and curriculum coordinator are not valid reasons.
- **REVIEW** - Continue to review Outcomes and Assessment strategies to improve the quality of reporting
- **MAP TASKSTREAM** - Continue to revise and improve mapping of courses and program outcomes within Taskstream so the reporting process is easier and accurate.
- **TRAINING** – Need more and better training on Taskstream

