

# Alternative & Renewable Energy Systems (BT) Canino School of Engineering Technology 2018 Assessment Report

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- Date of Presentation: January 16, 2019

# What was assessed? Student learning outcomes list:

- *SO #5 - Team Work*
  - An ability to conduct, analyze and interpret experiments, and apply experimental results to improve processes.
- *SO #9 - Ethics, Society, and Global*
  - An ability to understand and respect professional, ethical, and social responsibilities, and global issues.
- *SO #10 - Societal and Global Knowledge*
  - A knowledge of the impact of engineering technology solutions in a societal and global context.



# What was assessed? Student learning outcomes list:

- ***ISLO 4 - Social Responsibility***

- The category of social responsibility requires students to demonstrate understanding of cultural relations and global concerns. Students should demonstrate cultural sensitivity and global concerns with an emphasis on ethical standards.
- Ethical Reasoning
- Global Learning
- Teamwork



# Where were outcomes assessed?

- *SO #5 - Team Work*  
AREA 320
- *SO #9 - Ethics, Society, and Global*  
SOET 377
- *SO #10 - Societal and Global Knowledge*  
AREA 391



# Where were outcomes assessed?

- *ISLO 4 - Social Responsibility*
  - *AREA 320, SOET 377, AREA 391*



# How was the assessment accomplished?

- Student work assessed:
  - Homework
  - Midterm and final exams
  - Group projects
  - Term papers
- Measurement strategy:
  - Applicable rubrics used for oral presentations, term papers and group projects
  - % of questions answered correctly on homeworks and midterm/final exams
- Sample size:
  - All students who take the designated assessed courses, see attachment for N for each course



# Assessment results: What have the data told us?

- **SO #5 - Team Work**

- *AREA320(F18) Contributes to Team Meetings*
- *Facilitates the Contributions of Team Members*
- *Individual Contributions Outside of Team Meetings*
- *Fosters Constructive Team Climate*
- *Responds to Conflict*

**FINDINGS:**

- *Contributes to Team Meetings* : 100% students got 85% or higher
- *Facilitates the Contributions of Team Members*: 100% students got 90% or higher
- *Individual Contributions Outside of Team Meetings*: 100% students got 89% or higher
- *Responds to Conflict*: 100% students got 85% or higher



# Assessment results: What have the data told us?

- ***SO #9 - Ethics, Society, and Global***
  - ***SOET 377(F18)***, Moral issues and respect for code of ethics-Analyze moral issues in engineering technology and respect engineering code of ethics
  - *80% of students are expected to score 80% or higher on case studies assignment.*

## ***FINDINGS:***

- 90% of students scored 90% or higher on case studies assignment.
- This measure exceeded the target established for the outcomes. As such, no improvement plan is needed. Students achieved ethical reasoning through case studies.
- Number of students who participated in this assignment is (24).





# Assessment results: What have the data told us?

- ***SO #9 - Ethics, Society, and Global***

- *SOET 377(F18), Trust, reliability and respect for diversity-Students will demonstrate the knowledge of trust and engineering reliability and respect for diversity. ABET Student Outcomes (3). Social Responsibility (Ethical Reasoning)*
- *80% of students are expected to score 80% or higher on case studies assignment.*

***FINDINGS:***

- 90% students scored 85% or higher on the case analysis assignment which exceeded the established target. No improvement plan is needed since class performance expectation was exceeded. Students ethical reasoning was achieved through case studies.
- Number of students who participated in this case analysis assignment (21).



# Assessment results: What have the data told us?

- ***SO #10 - Societal and Global Knowledge***

- *AREA 391(F18), This outcome will be measured based on content developed for the final project - specifically pointed questions designed to address items in the global learning rubric.*
- *70% of students demonstrate 70% competence.*

***FINDINGS:***

- *9 of 20 students (45%) demonstrated 70% or greater proficiency in this area, NOT MET*



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

- Continue to revise the course curriculum to better align with the program’s objectives according to the SLO outcomes
- Continue to revise the related courses to better align with the student learning outcomes
- Advise students in the program to seek for additional instructional support when needed, e.g. tutoring.



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

- Continue to map courses and outcomes in Taskstream so the software can assist with this process better
- Raise the standard and expectations from semester 1 across all faculty to hold students accountable for late assignments...(meet deadlines)



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

- AREA 391: This measure was evaluated as a component of the final project. Several teams performed poorly in this area more as a result of time management failures rather than an ability to perform these tasks. This item might better be completed as a separate assignment in the future. It would also be a good idea to devote more time to discussing this component in class rather than simply setting the students free with the prompts and the rubric.
- This measure really only assessed 7 students rather than 20 students because of the way in which it was assigned (as part of a group project). Students split up the work and only one person per team took a stab at this content. Maybe in the future, students should be asked individually to take a stab at one of the prompts and provide an in depth report on it - it proved very difficult because of the nature of the rubric for students to do justice (provide answers of sufficient depth and complexity) to each of so many prompts.



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

- AREA 320 (team work): Along with student evaluation to their group mate faculty evaluation will be implemented next time.



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

- AREA 370 – E&M II needs more equipment to conduct lab test in the area of Fuel cell, Battery, etc.
- We will need more full time faculty to expand the program. Currently only one full time faculty in this program.
- We may explore some software for ARES electives. Like Homer Pro for AREA 323.



# Attachments: 2017 SLO Findings





# PSLO 3– Experimental processes

## Assessment Findings Data

<i>SO #5 - Team Work</i>									
<i>-Contributes to Team Meetings</i> <i>-Facilitates the Contributions of Team Members</i> <i>-Individual Contributions Outside of Team Meetings</i> <i>-Fosters Constructive Team Climate</i> <i>-Responds to Conflict</i>									
	Measures	Not Met		MET		Exceeded		No Findings	
		N	%	N	%	N	%	N	%
All Courses	1					1	100		
AREA 320	1					1	100		



# PSLO 4– Design Systems Assessment Findings Data

SO #9 - Ethics, Society, and Global

*Moral issues and respect for code of ethics-Analyze moral issues in engineering technology and respect engineering code of ethics*

	Measures	Not Met		MET		Exceeded		No Findings	
		N	%	N	%	N	%	N	%
All Courses	1					1	100		
SOET 377	1					1	100		



# PSLO 6– ID, Analyze and Solve Assessment Findings Data

*SO #10 - Societal and Global Knowledge*

*This outcome will be measured based on content developed for the final project - specifically pointed questions designed to address items in the global learning rubric.*

	Measures	Not Met		MET		Exceeded		No Findings	
	N	N	%	N	%	N	%	N	%
All Courses	1	1	100						
AREA 391	1	1	100						

