



 **SUNY CANTON**

Program/Department
Canino School of Engineering Technology
Fall 2016 Assessment Report



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What was assessed? Student learning outcomes list:

★ *SO 1 – Select and Apply Knowledge, Techniques, Skills, and Tools*

★ *SO 2 – Ability to Select and Apply Math, Science, Engineering, and Technology to Applications and Analytical Problems*

★ *SO 3 – Be Able to Conduct Tests and Experiments*

★ *SO 4 – Design Systems, Components, or Processes*

- *SO 5 – Team Member or Leader*

- *SO 6 – Problem Solving*

- *SO 7 – Communication Skills*

- *SO 8 – Continual Professional Development*

- *SO 9 – Professionalism, Ethics, and Diversity*

- *SO 10 – Societal and Global Impact*

- *SO 11 – Quality, Timeliness, and Continuous Improvement*

★ **Note:** These are the SLO's being reported on today – they are the SLOs being assessed in this part of our ABET cycle – **they reflect Spring '16 and Fall '16 data**

* **Note:** Each SO is broken down into measurable components – performance indicators. Each is individually assessed and evaluated and collectively they are used to evaluate the SO.



What was assessed? Student learning outcomes list:

Student Outcome	Timeline					
	Cycle 3			Cycle 4		
	Spring '16 - Fall '16	Spring '17 - Fall '17	Spring '18 - Fall '18	Spring '19 - Fall '19	Spring '20 - Fall '20	Spring '21 - Fall '21
SO#1	X			X		
SO#2	X			X		
SO#3	X			X		
SO#4	X			X		
SO#5		X			X	
SO#6		X			X	
SO#7		X			X	
SO#8		X			X	
SO#9			X			X
SO#10			X			X
SO#11			X			X

How was the assessment accomplished?

- Student work assessed:
 - Homework/Laboratory assignments
 - exam question(s)
 - projects
- Measurement strategy:
 - % of students who scored $>$ determined % score (e.g. 70% of students will score 70% or greater)
 - Rubrics used for reports, presentations, etc.
- Sample size:
 - Variable depending on class
 - Ranged from 4-30s



How was the assessment accomplished?

- Student work assessed: *SO 1 – Select and Apply Knowledge, Techniques, Skills, and Tools*

Program Performance SO	Indicator	Measurement Tool Used (# or letter in parentheses is the course learning outcome being used)
SO#1 (ABET a)	a - overall knowledge, techniques, skills, and tools	CONS 477 (1) - Basic Research CONS 477 (2) - Project Proposal, knowledge and report CONS 477 (5) - Standard Report, overall knowledge and skills CONS 101 (a) - surveying level loop CONS 101 (f) - surveying, site layout CONS 203 (e) - map CONS 222 (d) - quantity estimate CONS 274 (f) - scheduling
	b - Uses technical tools/instruments and software applications to process information	CONS 203 (b)- Wolf Pak software CONS 203 (e) - Civil 3D CONS 203 (d) - total station equipment SOET 116 (f) - CADD software, portfolio SOET 250 () - REVIT/BIM software CONS 350 () - GIS software CONS 336 (e) - RISA Stad Prod, structural analysis software

Actual assessment data

- SO 1: Select and Apply Knowledge, Techniques, Skills, and Tools*

Performance Indicator	Measure	Target	Findings	Target Achiev.
a - overall knowledge, techniques, skills, and tools	CONS 477 (1) - Basic Research	Class average 80% or better	class average 88%	Exceeded
	CONS 477 (2) - Project Proposal, knowledge and report	Class average 80% or better	class average 88%	Exceeded
	CONS 477 (5) - Standard Report, overall knowledge and skills	Class average 80% or better	class average 92.5%	Exceeded
	CONS 101 (a) - surveying level loop	80 % of the students will complete this with 3rd order accuracy	8/11 students were able to survey a differential leveling loop with third order accuracy on their first attempt. 10/11 students completed the lab within third order accuracy on their second attempt.	Exceeded
	CONS 101 (f) - surveying, site layout	75% of students will demonstrate proficiency in this area by scoring 80% or better on the lab grade	11/11 groups showed proficiency in calculating the true direction of a line.	Exceeded
	CONS 203 (e) - map	80 % of student will score 80% or better on the map project	5 group maps were submitted: 2 rec'd grades of 95 and 3 rec'd grades of 70.	Not Met
	CONS 222 (d) - quantity estimate	75% of students will accurately submit an estimate that is in the correct format and 75% of the students will submit a bid which is within 25% of the instructors value.	9/11 students submitted a final project in the correct format as specified. 7/11 students submitted a final estimate that was within 25% of the instructors value	Met
	CONS 274 (f) - scheduling	70% of students will keep a well organized log, including all supplemental documents received throughout the semester	Students were expected to keep a log book for each day documenting the "job site Students were evaluated two separate times: 1.) 8/12 students scored 70% or better on their log book entries. 2.) Students were asked three questions on the final exam that pertained to occurrences during the school year. 8/12 students were able to answer 2 of 3 questions accurately.	Met

Actual assessment data

- SO 1: Select and Apply Knowledge, Techniques, Skills, and Tools*

Performance Indicator	Measure	Target	Findings	Target Achiev.
b - Uses technical tools/instruments and software applications to process information	CONS 203 (b)- Wolf Pak software	100% of students will attach WP printouts to HW in unit 1	All students used WP successfully for several assignments.	Met
	CONS 203 (e) - Civil 3D	80 % of student will score 80% or better on the map project	5 group maps were submitted: 2 rec'd grades of 95 and 3 rec'd grades of 70.	Not Met
	CONS 203 (d) - total station equipment	- 70% of students score 70 or higher	- 6 Out of 14 scored 70% or greater	Not Met
		- 70 % of students will score 70 % or higher	- 7 of 14 (50%) scored 70 or above	Not Met
		- 80% of parties will close their centerline to within the prescribed closure limit	- 4 parties staked out a 430 foot curve, 3 of the parties closed within 0.20 feet. All parties arrived with field books prepared to do the work.	Met
		- 80% will submit accurate hw	- 12 of 14 did at least one hor curve complete and correct; 9 of 14 did all 3 curve assignments	Met
		- 80% submit accurate hw	- 10 of 14 submitted 2 curve problems complete and supported by wolfpack.	Students got better with each, so MET
	SOET 116 (f) - CADD software, portfolio	90%-10%	This course does succeed rather well at establishing a basic knowledge of the User Interface (UI) the majority of students could pass the basic CAD test given by most companies for an entry level employee using CAD software	Met
	SOET 250 (a?) - REVIT/BIM software	90% should succeed, 10% may not	Course continues to succeed providing Basic BIM skills	Met
	CONS 350 (j) - GIS software	No target set	No data input yet	--
	CONS 336 (e) - RISA Stad Prod, structural analysis software	80% will score higher	Class average = 83%	Exceeded

Evaluation of Assessment Data

- SO 1: Select and Apply Knowledge, Techniques, Skills, and Tools

SLO	Performance Indicator	Measure	Target Achiev.	Perf. Ind. Achiev.	SLO Achiev.
SO#1 (ABET a)	a - overall knowledge, techniques, skills, and tools	CONS 477 (1) - Basic Research	Exceeded	7 of 8 Met so 87.5% Met so MET	
		CONS 477 (2) - Project Proposal, knowledge and report	Exceeded		
		CONS 477 (5) - Standard Report, overall knowledge and skills	Exceeded		
		CONS 101 (a) - surveying level loop	Exceeded		
		CONS 101 (f) - surveying, site layout	Exceeded		
		CONS 203 (e) - map	Not Met		
		CONS 222 (d) - quantity estimate	Met		
		CONS 274 (f) - scheduling	Met		
		CONS 203 (b)- Wolf Pak software	Met		
		CONS 203 (e) - Civil 3D	Not Met		
	b - Uses technical tools/instruments and software applications to process information	CONS 203 (d) - total station equipment	Not Met	5/7 Met 1/7 Not Met 1/7 No Data Input = 71%+ (depending on missing data), so → MET	Met
		SOET 116 (f) - CADD software, portfolio	Met		
		SOET 250 (a?) - REVIT/BIM software	Met		
		CONS 350 () - GIS software	--		
		CONS 336 (e) - RISA Stad Prod, structural analysis software	Exceeded		

** Target for Performance Indicator = > 70% of measurement tools Met or Exceeded

Assessment results: What have the data told us?

- *SO 1: Select and Apply Knowledge, Techniques, Skills, and Tools*
 - *Outcome met (most likely?)*
 - *Other Comments:*
 - *Performance Indicator “a” is met.*
 - *Performance indicator “b” is met.*
 - *Some of the assessment data was input very late and made it difficult to readily assess/evaluate the program. Some data is still missing.*
 - *Software availability and use in 100/200 level courses is good, but not seeing regular use of software in 300/400-level courses – because either we don’t have what we need or where we do have it we’re are not using it.*
 - *Good use of instrumentation in curriculum, but not fully reflected in assessment.- missing use of env. eng. tech. instruments.*



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

- **SO1:**

- Faculty need to input data into Taskstream in a timely fashion. This is in part due to work overload. Faculty loading needs to be addressed.
- Faculty need to input the right information into Taskstream. Need better training in Taskstream. Additional training needs to be provided.
- Program Coordinators need to be given more permissions and training in Taskstream so they can generate their own reports and so the program assessment can be setup to match accreditation framework and needs.
- Need to add environmental eng. assessment data for use of instruments – have course data, just need to map into program level. Will do this semester.
- Faculty have identified and determined cost of design software for 300/400 structural design courses. Will continue to ask/seek funding. See Budget request in later slide.



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

- **SO1:**

- Faculty offering SOET 116, SOET 250, and CONS 203 indicate that they are not able to cover the content they need to and that in subsequent classes students are not good with using CADD and other drafting software. This does not show in the program assessment. Faculty are discussing how we can work on this – is it possible to add 1 credit to these courses? How can this content be incorporated into more classes to ensure continual use and learning. Discussions are ongoing.
- Another item that was hard to show in the assessment data, but was discussed in relation to this program SO is the availability of a plotter to faculty. There are class related materials that we need to be able to print – and do so quickly and cheaply in house – Central Printing is not a viable option. We need a plotter and it needs to be larger than the existing plotter. This would be used for maps, building plans, posters, and other classroom resources.



How was the assessment accomplished?

- Student work assessed: *SO 2 – Ability to Select and Apply Math, Science, Engineering, and Technology to Applications and Analytical Problems*

Program SO	Performance Indicator	Measurement Tool Used (# or letter in parentheses is the course learning outcome being used)
SO#2 (ABET b)	a - Select and apply knowledge of mathematical skills (algebra, trigonometry, calculus, differential equations, and statistics)	CONS 216 (b) - Alg.,
		CONS 101 (i) - Trig
		CONS 285 (7) - Trig
		CONS 386 (j) - Statistics
		CONS - - Calc/Diff. Eq.
	b - Select and apply knowledge of science (geology, biology, chemistry, and physics)	CONS 322 (b) - Physics
		CONS 272 (a) - Physics
		CONS 285 (6) - geology
		CONS 386 (n) - mass balance
c - Select and apply knowledge of engineering and technology	CONS 387 (6) - biology	
	CONS 386 (l) - Chemistry	
	CONS 203 (e)	
		CONS 370 (c)

Actual assessment data

- *SO 2: Ability to Select and Apply Math, Science, Engineering, and Technology to Applications and Analytical Problems*

Performance Indicator	Measure	Target	Findings	Target Achiev.
a - Select and apply knowledge of mathematical skills (algebra, trigonometry, calculus, differential equations, and statistics)	CONS 216 (b) - Alg.,	> 70% score 70% or better	Exam 1, problems 3, 4, +5 class average = 77.19% +/- 31/95% 14 of 19 (73.68%) scored > 70%	Met
	CONS 101 (i) - Trig	75% of students will demonstrate proficiency on the exam question(s)	29/33 students were able to calculate departures and latitudes on exam 3 question 6c	Exceeded
	CONS 285 (7) - Trig	70% of students score > 70%	class average = 87.27% +/- 21.12% 9 of 11 (81.82%) scored > 70%	Met
		> 70% of class scored > 70%	FALL 2015 Data - Not Offered in Sp'16-F'16 Cycle Class average = 89.36% 5 of 5 scored > 70% = 100% 2488 average = 90.0% 2 of 2 scored > 70% = 100%	Exceeded
	CONS 386 (j) - Statistics CONS - Calc/Diff. Eq. no course mapped to this yet		---	



Actual assessment data

- SO 2: Ability to Select and Apply Math, Science, Engineering, and Technology to Applications and Analytical Problems*

Performance Indicator	Measure	Target	Findings	Target Achiev.
b - Select and apply knowledge of science (geology, biology, chemistry, and physics)		70% score 70% or better	- 4 of 5 (80 %, all but 1) scored satisfactorily (100%)	Met
	CONS 322 (b) - Physics	70% score 70% or better	- 2 of 5 (40%) scored satisfactorily	Not Met
	CONS 272 (a) - Physics	class average 70% or better	Class Average 69.35%	Met
		70% of students score > 70%	class average = 79.45% +/- 26.66%	Met
	CONS 285 (6) - geology		9 of 11 (81.82%) scored > 70%	
		> 70% of students will score > 70%	FALL 2015 Data - Not Offered in Sp'16-F'16 Cycle	Not Met
			Class average = 63.3%	
			3 of 5 scored > 70% = 60%	
c - Select and apply knowledge of engineering and technology	CONS 386 (n) - mass balance	> 70% of students will score 70% or > on lab	2488 average = 33.3%	
			0 of 2 scored > 70% = 0%	
	CONS 387 (6) - biology		Final Exam, MC Qs 33-55, SA 5-6	Met
		> 70% of students score > 70%	class average = 80.18% +/- 13.61%	
			8 of 11 (72.73%) scored > 70%	
	CONS 386 (l) - Chemistry		Class average = 94.75%	Exceeded
		5 of 5 scored > 70% = 100%		
		2488 average = 92.5%		
		2 of 2 scored > 70% = 100%		
	CONS 203 (e)	80 % of student will score 80% or better on the map project	5 group maps were submitted: 2 rec'd grades of 95 and 3 rec'd grades of 70.	Not Met
	CONS 304 (h)	class average 80% or better	class average 95%	Exceeded

Evaluation of Assessment Data

- SO 2: Ability to Select and Apply Math, Science, Engineering, and Technology to Applications and Analytical Problems*

SLO	Performance Indicator	Measure	Target Achiev.	Perf. Ind. Achiev.	SLO Achiev.
SO#2 (ABET b)	a - Select and apply knowledge of mathematical skills (algebra, trigonometry, calculus, differential equations, and statistics)	CONS 216 (b) - Alg.,	Met	4/4 Met = 100% Met so → MET	
		CONS 101 (i) - Trig	Exceeded		
		CONS 285 (7) - Trig	Met		
			Exceeded		
		CONS 386 (j) - Statistics	---		
		CONS - Calc/Diff. Eq.	Met		
	b - Select and apply knowledge of science (geology, biology, chemistry, and physics)	CONS 322 (b) - Physics	Not Met	5/7 Met/Exceede d 2/7 Not Met = 71% Met so → MET	Met
		CONS 272 (a) - Physics	Met		
		CONS 285 (6) - geology	Met		
			Not Met		
		CONS 386 (n) - mass balance	Met		
		CONS 387 (6) - biology	Exceeded		
c - Select and apply knowledge of engineering and technology	CONS 386 (l) - Chemistry	Not Met	1 Exceeded and 1 Not Met = 50% Met, so → NOT MET		
	CONS 203 (e)	Exceeded			
	CONS 304 (h)				

** Target for Performance Indicator = > 70% of measurement tools Met or Exceeded

Assessment results: What have the data told us?

- *SO 2: Ability to Select and Apply Math, Science, Engineering, and Technology to Applications and Analytical Problems*
 - Outcome met
 - Students struggle most on: *In Reinforcing/Emphasizing classes, students are good at application/use of science and math skills to solve problems, but what the program assessment doesn't show is that they do struggle with this at the 100/200-level – possible cause for retention issues*
 - Other comments:
 - *Need better/more measurement tools for performance indicator "c".*
 - *Need measurement tool(s) for use of Calculus and Differential Equations*



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

- **SO2:**

- Faculty this upcoming semester will evaluate courses for additional measurement tools using Calculus and Differential Equations.
- Faculty this upcoming semester will evaluate courses for additional measurement tools for Performance Indicator “c” and will re-evaluate this performance indicator in the Spring ‘17-Fall-’17 assessment year.



How was the assessment accomplished?

- Student work assessed: *SO 3 – Be Able to Conduct Tests and Experiments*

Program Performance Indicator Measurement Tool Used (# or letter in parentheses is the course learning outcome being used)

SO	Measurement Tool Used (# or letter in parentheses is the course learning outcome being used)	
SO#3 (ABET c)	a - Conduct \tests and measurements	<p>CONS 216 (f) - soil compaction lab</p> <p>CONS 280 (e) - concrete mix design</p> <p>MECH 221 (e) - material/steel testing</p> <p>CONS 387 (10) - jar test for coag/flocc</p> <p>CONS 477 (4) - capstone</p>
	b - Conduct, analyze, and interpret experiments	<p>CONS 216 (f) - soil compaction lab</p> <p>CONS 280 (e) - concrete mix design</p> <p>MECH 221 (e) - material/steel testing</p> <p>CONS 387 (10) - jar test for coag/flocc</p> <p>CONS 477 (4) - capstone</p>
	c - Apply experimental results to improve processes	<p>CONS 216 (f) - soil compaction lab</p> <p>CONS 280 (e) - concrete mix design</p> <p>MECH 221 (e) - material/steel testing</p> <p>CONS 387 (10) - jar test for coag/flocc</p> <p>CONS 477 (4) - capstone</p>

Actual assessment data

- SO 3: Be Able to Conduct Tests and Experiments

Performance Indicator	Measure	Target	Findings	Target Achiev.
a - Conduct tests and measurements		> 70% score 70% or better > 70% score 70% or better	- Exam 2, MC 14-19, SA 3-13, Problems 1, 2, and 3 class average = 85.83% +/- 9.83% 18 of 19 students (94.74%) scored > 70% - class average = 81.82%	
b - Conduct, analyze, and interpret experiments	CONS 216 (f) - soil compaction lab	> 70% scored > 70%	standard deviation = 20.56% # who scored > 70% = 18 of 19 % who scored > 70% = 94.74% 1 student did not submit report The assessment is based on Lab 8 assignment, which was just the mix design calculations.	Exceeded Exceeded
c - Apply experimental results to improve processes	CONS 280 (e) - concrete mix design		class avg 99.4% +/- 1.7%, 25 of 25 (100%) scored > 70%	Exceeded
	MECH 221 (e) - material/steel testing	don't have access to this data	---	---
	CONS 387 (10) - jar test for coag/flocc	> 70% of students will score 70% or > on lab	class average = 87.42% +/- 9.71% 11 of 12 (91.67%) scored > 70%	Exceeded
	CONS 477 (4) - capstone	Class average 80% or better	class average 88.5%	Exceeded



Evaluation of Assessment Data

- SO 3: Be Able to Conduct Tests and Experiments

SLO	Performance Indicator	Measure	Target Achiev.	Perf. Ind. Achiev.	SLO Achiev.
SO#3 (ABET c)	a - Conduct tests and measurements	CONS 216 (f) - soil compaction lab	Exceeded Exceeded	4/4 Exceeded, = 100% Met/Exceeded, so → EXCEEDED	Exceeded (however, each performance indicator was not assessed separately)
		CONS 280 (e) - concrete mix design	Exceeded		
		MECH 221 (e) - material/steel testing	---		
		CONS 387 (10) - jar test for coag/flocc	Exceeded		
	b - Conduct, analyze, and interpret experiments	CONS 477 (4) - capstone	Exceeded		
		CONS 216 (f) - soil compaction lab	Exceeded Exceeded	4/4 Exceeded, = 100% Met/Exceeded, so → EXCEEDED	
		CONS 280 (e) - concrete mix design	Exceeded		
		MECH 221 (e) - material/steel testing	---		
	CONS 387 (10) - jar test for coag/flocc	Exceeded			
	c - Apply experimental results to improve processes	CONS 477 (4) - capstone	Exceeded		
		CONS 216 (f) - soil compaction lab	Exceeded Exceeded	4/4 Exceeded, = 100% Met/Exceeded, so → EXCEEDED	
		CONS 280 (e) - concrete mix design	Exceeded		
MECH 221 (e) - material/steel testing		---			
CONS 387 (10) - jar test for coag/flocc	Exceeded				
		CONS 477 (4) - capstone	Exceeded		

** Target for Performance Indicator = > 70% of measurement tools Met or Exceeded

Assessment results: What have the data told us?

- *SO 3: Be Able to Conduct Tests and Experiments*
 - *Outcome Met*
 - *Other Comments:*
 - *Students do well here because in most of our courses that are being used for tests and experiments we have good labs and equipment. They are good because they have continued to be supplied. Need continued funding to maintain success of this program SLO.*
 - *Not seeing many 300/400-level civil/structural courses conducting experiments and analyzing data (well covered in 300/400 level environmental eng courses) – no equipment to do so in civil/structural courses.*
 - *Some course assessment (not seen here) indicate some course learning outcomes not being met due to lack of equipment (e.g. CONS 280 asphalt testing equipment)*



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

- S03:

- Faculty need to determine what is needed for structural testing equipment, obtain quotes, and look for funding.
- Faculty need to evaluate the department’s need for asphalt mixing and testing equipment. It would cost a significant amount \$50K++ and would need to be externally funded. Structural testing equipment higher priority at the moment – will pursue that first.
- We will continue to request for funding in our budget that will support existing labs.



How was the assessment accomplished?

- Student work assessed: *SO 4 – Design Systems, Components, or Processes*

Program SO	Performance Indicator	Measurement Tool Used (# or letter in parentheses is the course learning outcome being used)
SO#4 (ABET d)	a - Design systems, components, or processes for civil eng. tech.	CONS 477 (3) - capstone design CONS 322 (i) - storm water design CONS 304 (h) - design project
	b - Design systems, components, or processes for environmental eng. tech.	CONS 375 (b) - design project CONS 316 (f) - design project CONS 477 (3) - capstone design CONS 322 (i) - storm water design CONS 387 (11) - design of H2O treatment plant systems

Actual assessment data

- SO 4: Design Systems, Components, or Processes

Performance Indicator	Measure	Target	Findings	Target Achiev.
a - Design systems, components, or processes for civil eng. tech.	CONS 477 (3) - capstone design	Class average 80% or better	class average 92.5%	Exceeded
		70% will score 70 or better	- 4 of 5 scored satisfactorily on the hw assignment (problem 12.6)	
		70% will score 70 or better	scores: 20,15,25,25,21 out of 25	
	CONS 322 (i) - storm water design		- final exam scores: 83, 72, 51, 95, 94	Met
	CONS 304 (h) - design project	class average 80% or better	4 of 5 successful	Met
b - Design systems, components, or processes for environmental eng. tech.	CONS 375 (b) - design project	Class average 70% or better	class average 95%	Exceeded
	CONS 316 (f) - design project	Class average 80% or better	class average 86%	Exceeded
	CONS 477 (3) - capstone design	Class average 80% or better	Class average 81.75%	Exceeded
	CONS 477 (3) - capstone design	Class average 80% or better	class average 92.5%	Exceeded
		70% will score 70 or better	- 4 of 5 scored satisfactorily on the hw assignment (problem 12.6)	
		70% will score 70 or better	scores: 20,15,25,25,21 out of 25	
	CONS 322 (i) - storm water design		- final exam scores: 83, 72, 51, 95, 94	Met
			4 of 5 successful	Met
		- class average =93.31% +/- 7.6%		
		12 of 12 (100%) scored > 70%		
		- class average = 98.61% +/- 3.88%		
		12 or 12 (100%) scored > 70%	Exceeded	
	CONS 387 (11) - design of H2O treatment plant systems	70% will score 70 or better	- class average = 96.25% +/- 6.44%	Exceeded
		70% will score 70 or better	12 of 12 (100%) scored > 70%	Exceeded

Evaluation of Assessment Data

- SO 4: Design Systems, Components, or Processes

SLO	Performance Indicator	Measure	Target Achiev.	Perf. Ind. Achiev.	SLO Achiev.
SO#4 (ABET d)	a - Design systems, components, or processes for civil eng. tech.	CONS 477 (3) - capstone design	Exceeded	5/5	Met
		CONS 322 (i) - storm water design	Met	Met/Exceeded = 100%	
		CONS 304 (h) - design project	Met	Met/	
		CONS 375 (b) - design project	Exceeded	Exceeded so → MET	
		CONS 316 (f) - design project	Exceeded		
	b - Design systems, components, or processes for environmental eng. tech.	CONS 477 (3) - capstone design	Exceeded		
		CONS 322 (i) - storm water design	Met	3/3 Met/ Exceeded = 100%, so → MET	
			Met		
		CONS 387 (11) - design of H2O treatment plant systems	Exceeded		
			Exceeded		



** Target for Performance Indicator = > 70% of measurement tools Met or Exceeded

Assessment results: What have the data told us?

- *SO 4: Design Systems, Components, or Processes*
 - *Outcome Met*
 - *Other comments: Faculty indicated in course assessment the need for design software (e.g. structural analysis software)*



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

- SO4:
 - Faculty have determine software needs for structural design classes and continue to ask/seek for funding. See Budget item.



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

- TIME

- Need time for individual faculty to assess and improve their courses
- Need time for faculty to import their course data into Taskstream
- Need time for program faculty to collectively review course learning outcomes and Course ↔ Program outcome assessment mapping
- Need time for the program coordinator to generate the required assessment reports.
- Need time for program faculty to collectively evaluate program assessment data and discuss continuous improvement action items
- Currently there is not enough time to complete all of the above tasks, and/or complete them by current deadlines (e.g. this January symposium)
- There is not enough time due to the collective demands put upon faculty (e.g. heavy teaching loads, recruiting, committees, service, assessment, new scholarly activity demands, etc.)
- Request consideration of the following:
 - **More reasonable deadlines**
 - **3 credit hour release time EACH SEMESTER for the Program Coordinators**
 - **Department Chairs be given compensation/additional release time for also acting a Program Coordinator**
 - **All faculty's load to be considered full-time (12 credits or 15-17 contact hours) be reevaluated – consider reducing cumulative contact hour load of 30-34 /academic year to 24 /academic year, in-line with other 4-year comprehensives.**



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

- **Allocation of existing department funds:**
 - Must maintain current budget at a minimum – actually given this year's cuts we need more than allocated! We don't have enough \$ to run classes this year! We will start to "Not Meet" program SLOs if we don't have the materials we need. We need to at least get back to last year's allocations, which were still tight and under what we needed.
 - Need to replenish materials used for testing and experiments (e.g. water quality testing) – part of why SO3 is so successful
- **Additional Funds Requested Based on Program Assessment:**
 - \$ for plotter: \$5-8,000 (? – have not obtained an exact quote as of yet)
 - \$ for scanners: ~ \$200/scanner x 7 faculty in department = \$1400 (see later slide related to improving assessment process)
 - \$ for new structural design software (see next slide)
 - \$ for civil/structural testing equipment (needs additional faculty evaluation)

**This year's assessment was primarily done on courses at the end of the program. Additional continuous improvement resources may be needed to address the 100/200 level courses as well since they greatly impact retention in the program. **



Software Info

- STRUCTURAL ANALYSIS SOFTWARE
 - *Software*: Staad Pro + Bentley suite license
 - *Cost*: \$200/yr/license; need 5 seats – so \$1000/year
 - *Source*: Dr. Shi has detailed information and quotes
 - *Use*: CONS 304, CONS 324, CONS 370, CONS 375, CONS 477, ASCE Steel Bridge Competition, and any new design courses



What changes would you make to the Assessment Process?

- Need to assess full year (e.g. S'16+F'16) – a single semester is meaningless {we did a full year in this report}
- Taskstream Assessment Data Reports
 - What we have now:
 - We cannot continue to get the program assessment report a day before the symposium – even a week before is not enough time to evaluate it and report
 - I tried to generate my own report in Taskstream and could not – I had to manually extract every course assessment report, create my own program spreadsheet, and extract each line of assessment data from the courses to input into the program spreadsheet – this was VERY time consuming
 - Currently, Taskstream is great for course assessment, but horrible with program assessment
 - What we need:
 - Program coordinators need to be able to generate reports and be provided with proper training on how to do so.
 - Program coordinators need access to all courses in their program.
 - Programs need to be allowed to access their program in the way they feel is most effective – for ABET programs, we need to put ABET assessment first and give the University what it needs from that without creating a new process, format, or cycle
 - Taskstream needs to be programmed to meet program assessment needs – for ABET, right now it's not set up for that. To be an effective tool and for us to work most efficiently we need to be able to use it for school/university needs and ABET needs. Will require additional programming.



What changes would you make to the Assessment Process?

- Timing of the Assessment and Evaluation
 - Currently there is not enough time over winter break for the Program Coordinators to evaluate the programs. This is due to several factors - waiting on completion of course assessment, teaching winter term courses, spring course prep, other advising and administrative responsibilities, and manually generating the program assessment spreadsheet. We barely pulled the program assessment data together, the program coordinator did a preliminary evaluation, but program faculty did not have time do an evaluation and close-the-loop discussion collectively prior to the symposium. It was very difficult to get it done in the two weeks following.
 - Most faculty were still working on course assessment over the winter break – this data was not available until recently, and in some cases is still being worked on. Faculty do need to work on getting this completed sooner; however, with the current work load it's not feasible to complete as we go. Something has to give in faculty loading during the semester to allow time for this.

