SUNY CANTON

Civil & Environmental Engineering Technology
Canino School of Engineering Technology
Fall 2015 Assessment Report

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What was assessed? Student learning outcomes list:

- *SO 1 – Select and Apply Knowledge, Techniques, Skills, and Tools*
  - Have an ability to select and apply knowledge, techniques, skills, and modern tools in civil and environmental engineering technology to narrowly and broadly-defined engineering technology activities.
- *SO 2 – Ability to Select and Apply Math, Science, Engineering, and Technology to Applications and Analytical Problems*
  - *Have and ability to select and apply knowledge of mathematical skills (in algebra, trigonometry, calculus, differential equations, and statistics), science (physics, chemistry, biology, and geology), engineering, and technology problems that require the application of principles but extensive practical knowledge and applied procedures or methodologies.*
- *SO 3 – Be Able to Conduct Tests and Experiments*
  - *Be able to conduct standard tests and measurements, to conduct, analyze, and interpret experiments and apply experimental results to improve processes.*
- *SO 4 – Design Systems, Components, or Processes*
  - *Have an ability to design systems, components, or processes for broadly-defined engineering technology problems related to program educational objectives*
- *SO 5 – Team Member or Leader*
  - *An ability to function effectively as a member or leader of a technical team.*

* <u>Note</u>: 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:

- *SO 6 – Problem Solving*
  - Have an ability to identify, analyze, and solve narrowly and broadly defined engineering technology problems.

- *SO 7 – Communication Skills*
  - *Be able to communicate effectively and professionally in a non-technical environmental and civil engineering technology, environmental engineering technology, or construction environments through proper use of verbal, written, and graphical techniques; and an ability to identify and use appropriate technical literature.*

- *SO 8 – Continual Professional Development*
  - *Have an understanding of the need for an ability to engage in self-directed continuous professional development.*

- *SO 9 – Professionalism, Ethics, and Diversity*
  - *Have developed an understanding of and have a commitment to address professional, ethical, and diversity issues and responsibilities.*

- *SO 10 – Societal and Global Impact*
  - *Have knowledge of the impact of engineering technology solutions in a societal and global context.*

- *SO 11 – Quality, Timeliness, and Continuous Improvement*
  - *Have a commitment to quality, timeliness, and continuous improvement.*

* <u>Note</u>: 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.

Where were outcomes assessed?

- *SO 1 – Select and Apply Knowledge, Techniques, Skills, and Tools*
  CONS 101, CONS 172, CONS 203, CONS 222, CONS 272, CONS 280, CONS 336, CONS 370, CONS 385, CONS 386, ENGS 101, SOET 116, SOET 250

- *SO 2 – Ability to Select and Apply Math, Science, Engineering, and Technology to Applications and Analytical Problems*
  CONS 101, CONS 172, CONS 203, CONS 222, CONS 272, CONS 280, CONS 336, CONS 370, CONS 385, CONS 386, ENGS 101, SOET 116, SOET 250

- *SO 3 – Be Able to Conduct Tests and Experiments*
  CONS 101, CONS 203, CONS 272, CONS 280, CONS 385, CONS 386

- *SO 4 – Design Systems, Components, or Processes*
  CONS 172, CONS 203, CONS 272, CONS 280, CONS 336, CONS 370, CONS 385, CONS 386

- *SO 5 – Team Member or Leader*
  CONS 101, CONS 203, CONS 385, ENGS 101

* Note: Only Fall 2015 classes are shown; however, when we assess our program for ABET we consider all courses in the program. This will be shown after the Spring 2016 semester.

Where were outcomes assessed?

- *SO 6 – Problem Solving*

  CONS 101, CONS 172, CONS 203, CONS 272, CONS 370, CONS 385, CONS 386, ENGS 101

- *SO 7 – Communication Skills*

  CONS 101, CONS 172, CONS 203, CONS 222, CONS 272, CONS 280, CONS 385, CONS 386, ENGS 101, SOET 116, SOET 250

- *SO 8 – Continual Professional Development*

  CONS 222, CONS 272, CONS 370, CONS 385, CONS 386, ENGS 101

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

  CONS 370, CONS 385, CONS 386, ENGS 101, SOET 348, SOET 377

- *SO 10 – Societal and Global Impact*

  CONS 385, CONS 386, ENGS 101, SOET 377

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

  CONS 370, CONS 385, CONS 386, ENGS 101, SOET 116

* Note: Only Fall 2015 classes are shown; however, when we assess our program for ABET we consider all courses in the program. This will be shown after the Spring 2016 semester.

How was the assessment accomplished?

- Student Course Work Assessed:
    - Homework and Laboratory Assignments
    - Exam question(s)
    - Projects
    - Research papers/posters/fact sheets and/or oral presentations

- Program Related Activity
    - ASCE Student Chapter/Bridge Teach

- Measurement strategy:
    - % of students who scored > determined % score (e.g. 70% of students score 70% or greater)
    - rubrics used for reports, oral presentations, etc.

- Sample size:
    - Variable
    - Based on class size (ranged from 3-30s)

SO 1 – Select and Apply Knowledge, Techniques, Skills and Tools Assessment Data

SLO 1.1 - Overall knowledge, techniques, skills, and tools

	Measures	Not Met		Met		Exceeded	
	N	**N**	**%**	**N**	**%**	**N**	**%**
All Courses	22	3	14%	8	36%	11	50%
CONS 203	5	1	20%	3	60%	1	20%
CONS 222	1	1	100%	0	0%	0	0%
CONS 280	1	0	0%	1	100%	0	0%
CONS 336	4	1	25%	1	25%	2	50%
CONS 370	3	0	0%	0	0%	3	100%
CONS 385	4	0	0%	2	50%	2	50%
CONS 386	4	0	0%	1	25%	3	75%

* <u>Note</u>: For this and the other program SOs, the outcome was assessed and evaluated using only select course data from courses that evaluated the students' mastery of the SO at the time of graduation or upon the completion of a sequence of courses or subject matter. ABET has us assess and evaluate our program in this manner because they are concerned with our students' ability at the time of degree completion. We do however have all courses mapped into each outcome and we even generated a report that draws upon all of courses and all of the course learning outcomes that feed into each SO – we just were of the understanding that we should present the ABET style of report. In the future we will generate the report using all of the course learning outcomes that address that SO in order to evaluate the program at every level.

SLO 1.2 - Uses technical tools/instrumentation and software applications to process information

	Measures	Not Met		Met		Exceeded		Unspecified		No Findings	
	N	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
All Courses	23	7	30%	5	22%	9	39%	1	4%	1	4%
CONS 203	4	1	25%	1	25%	1	25%	0	0%	1	25%
CONS 222	4	1	25%	0	0%	3	75%	0	0%	0	0%
CONS 280	5	4	80%	1	20%	0	0%	0	0%	0	0%
CONS 336	1	0	0%	0	0%	1	100%	0	0%	0	0%
SOET 116	5	1	20%	3	60%	1	20%	0	0%	0	0%
SOET 250	4	0	0%	0	0%	3	75%	1	25%	0	0%

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

SLO 2.1 - Select and apply knowledge of mathematical skills

	Measures	Not Met		Met		Exceeded	
	N	**N**	**%**	**N**	**%**	**N**	**%**
All Courses	**13**	2	15%	1	8%	10	77%
CONS 101	1	0	0%	0	0%	1	100%
CONS 203	1	1	100%	0	0%	0	0%
CONS 370	2	0	0%	0	0%	2	100%
CONS 385	4	0	0%	0	0%	4	100%
CONS 386	5	1	20%	1	20%	3	60%

SLO 2.2 - Select and apply knowledge of science skills

	Measures	Not Met		Met		Exceeded	
	N	**N**	**%**	**N**	**%**	**N**	**%**
All Courses	8	0	0%	4	50%	4	50%
CONS 172	1	0	0%	0	0%	1	100%
CONS 336	1	0	0%	1	100%	0	0%
CONS 385	2	0	0%	2	100%	0	0%
CONS 386	4	0	0%	1	25%	3	75%

SLO 2.3 - Select and apply knowledge of engineering and technology skills

	Measures	Not Met		Met		Exceeded	
	N	**N**	**%**	**N**	**%**	**N**	**%**
All Courses	7	0	0%	3	43%	4	57%
CONS 203	4	0	0%	3	75%	1	25%
CONS 370	3	0	0%	0	0%	3	100%

SO 3 – *Be Able to Conduct Tests and Experiments* Assessment Data

SLO 3.1 - Conduct Tests and Measurements

	Measures	Not Met		Met		Exceeded		Unspecified	
	N	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
All Courses	**18**	**6**	**33%**	**3**	**17%**	**8**	**44%**	**1**	**6%**
CONS 280	9	6	67%	1	11%	2	22%	0	0%
CONS 385	3	0	0%	1	33%	2	67%	0	0%
CONS 386	6	0	0%	1	17%	4	67%	1	17%

SLO 3.2 - Conduct, Analyze, and Interpret Experiments

	Measures	Not Met		Met		Exceeded	
	N	**N**	**%**	**N**	**%**	**N**	**%**
All Courses	**17**	**1**	**6%**	**3**	**18%**	**13**	**76%**
CONS 385	9	1	11%	1	11%	7	78%
CONS 386	8	0	0%	2	25%	6	75%

SLO 3.3 - Apply experimental results to improve processes

	Measures	Not Met		Met		Exceeded	
	N	**N**	**%**	**N**	**%**	**N**	**%**
All Courses	**9**	**3**	**33%**	**1**	**11%**	**5**	**56%**
CONS 280	3	3	100%	0	0%	0	0%
CONS 385	6	0	0%	1	17%	5	83%

SO 4 – *Design Systems, Components, or Processes* Assessment Data

SLO 4.1 - Design Systems, Components, or Processes for Civil Eng. Tech.

	Measures	Not Met		Met		Exceeded	
	N	**N**	**%**	**N**	**%**	**N**	**%**
All Courses	9	3	33%	0	0%	6	67%
CONS 280	3	3	100%	0	0%	0	0%
CONS 370	6	0	0%	0	0%	6	100%

SLO 4.2 - Design Systems, Components, or Processes for Environmental Eng. Tech.

	Measures	Not Met		Met		Exceeded	
	N	**N**	**%**	**N**	**%**	**N**	**%**
All Courses	3	0	0%	2	67%	1	33%
CONS 385	2	0	0%	2	100%	0	0%
CONS 386	1	0	0%	0	0%	1	100%

SO 5 – *Team Member or Leader* Assessment Data

SLO 5.1 - An ability to function effectively as a leader of a technical team.

	Measures	Not Met		Met		Exceeded	
	N	**N**	**%**	**N**	**%**	**N**	**%**
All Courses	**2**	**0**	**0%**	**0**	**0%**	**2**	**100%**
CONS 101	2	0	0%	0	0%	2	100%
CONS 203	No Measures, No Findings						

SLO 5.2 - An ability to function effectively as a member a technical team.

	Measures	Not Met		Met		Exceeded	
	N	**N**	**%**	**N**	**%**	**N**	**%**
All Courses	**3**	**0**	**0%**	**0**	**0%**	**3**	**100%**
CONS 101	2	0	0%	0	0%	2	100%
CONS 203	No Measures, No Findings						
CONS 385	1	0	0%	0	0%	1	100%

SO 6 – *Problem Solving* Assessment Data

SLO 6.1 - Identify, Analyze, and Solve Problems for Civil Eng. Tech.

	Measures	Not Met		Met		Exceeded		Unspecified	
	N	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
All Courses	**37**	**2**	**5%**	**11**	**30%**	**23**	**62%**	**1**	**3%**
CONS 203	3	0	0%	3	100%	0	0%	0	0%
CONS 370	7	0	0%	0	0%	7	100%	0	0%
CONS 385	11	1	9%	3	27%	7	64%	0	0%
CONS 386	16	1	6%	5	31%	9	56%	1	6%

SLO 6.2 - Identify, Analyze, and Solve Problems for Environmental Eng. Tech.

	Measures	Not Met		Met		Exceeded		Unspecified	
	N	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
All Courses	**27**	**2**	**7%**	**8**	**30%**	**16**	**59%**	**1**	**4%**
CONS 385	11	1	9%	3	27%	7	64%	0	0%
CONS 386	16	1	6%	5	31%	9	56%	1	6%

SO 7 – *Communication Skills* Assessment Data

SLO 7.1 - Verbal Communication

	Measures	Not Met		Met		Exceeded	
	N	**N**	**%**	**N**	**%**	**N**	**%**
All Courses	2	0	0%	1	50%	1	50%
CONS 385	1	0	0%	1	100%	0	0%
CONS 386	1	0	0%	0	0%	1	100%

SLO 7.2 - Written Communication

	Measures	Not Met		Met		Exceeded	
	N	**N**	**%**	**N**	**%**	**N**	**%**
All Courses	3	0	0%	1	33%	2	67%
CONS 385	1	0	0%	1	100%	0	0%
CONS 386	2	0	0%	0	0%	2	100%

SLO 7.3 - Graphical Skills

	Measures	Not Met		Met		Exceeded		Unspecified	
	N	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
All Courses	6	0	0%	1	17%	4	67%	1	17%
CONS 203	1	0	0%	0	0%	1	100%	0	0%
CONS 385	1	0	0%	1	100%	0	0%	0	0%
CONS 386	2	0	0%	0	0%	2	100%	0	0%
SOET 116	1	0	0%	0	0%	1	100%	0	0%
SOET 250	1	0	0%	0	0%	0	0%	1	100%

SLO 7.4 - Technical Literature

	Measures	Not Met		Met		Exceeded	
	N	**N**	**%**	**N**	**%**	**N**	**%**
All Courses	2	0	0%	1	50%	1	50%
CONS 385	1	0	0%	1	100%	0	0%
CONS 386	1	0	0%	0	0%	1	100%

SO 8 – *Continual Professional Development*
Assessment Data

SLO 8.1 - Participate in industry related activities while at school

	Measures	Not Met		Met		Exceeded	
	N	**N**	**%**	**N**	**%**	**N**	**%**
All Courses							
Not Mapped							

SLO 8.2 - Gain familiarity with and show willingness to read industry related journals

	Measures	Not Met		Met		Exceeded	
	N	**N**	**%**	**N**	**%**	**N**	**%**
All Courses	5	1	20%	1	20%	3	60%
CONS 222	1	0	0%	0	0%	1	100%
CONS 272	1	1	100%	0	0%	0	0%
CONS 370	1	0	0%	0	0%	1	100%
CONS 385	1	0	0%	1	100%	0	0%
CONS 386	1	0	0%	0	0%	1	100%

SO 9 – *Professionalism, Ethics, and Diversity* Assessment Data

SLO 9.1 - Demonstrate an understanding of professional, ethical, and diversity responsibilities.

	Measures	Not Met		Met		Exceeded	
	N	**N**	**%**	**N**	**%**	**N**	**%**
All Courses	**10**	**0**	**0%**	**4**	**40%**	**6**	**60%**
CONS 370	1	0	0%	0	0%	1	100%
CONS 385	5	0	0%	3	60%	2	40%
CONS 386	1	0	0%	0	0%	1	100%
SOET 348	1	0	0%	1	100%	0	0%
SOET 377	2	0	0%	0	0%	2	100%

SLO 9.2 - Understand roles and responsibilities of public institutions and private organizations.

	Measures	Not Met		Met		Exceeded	
	N	**N**	**%**	**N**	**%**	**N**	**%**
All Courses	**6**	**0**	**0%**	**4**	**67%**	**2**	**33%**
CONS 385	3	0	0%	3	100%	0	0%
CONS 386	3	0	0%	1	33%	2	67%

SO 10 – *Societal and Global Impact*
Assessment Data

SLO 10.1 - Have knowledge of the impact of engineering technology solutions in a societal and global context.

	Measures	Not Met		Met		Exceeded	
	N	**N**	**%**	**N**	**%**	**N**	**%**
All Courses	**3**	**0**	**0%**	**1**	**33%**	**2**	**67%**
CONS 385	1	0	0%	1	100%	0	0%
CONS 386	1	0	0%	0	0%	1	100%
SOET 377	1	0	0%	0	0%	1	100%

SO 11 – *Quality, Timeliness, and Continuous Improvement* Assessment Data

SLO 11.1 - Submit deliverables on time

	Measures	Not Met		Met		Exceeded	
	N	N	%	N	%	N	%
All Courses	3	0	0%	1	33%	2	67%
CONS 370	1	0	0%	0	0%	1	100%
CONS 385	1	0	0%	1	100%	0	0%
CONS 386	1	0	0%	0	0%	1	100%

SLO 11.2 - Prepare a schedule in CPM format

	Measures	Not Met		Met		Exceeded	
	N	N	%	N	%	N	%
All Courses							
No Mapping							

SLO 11.3 - Develop and follow a plan for a project

	Measures	Not Met		Met		Exceeded	
	N	N	%	N	%	N	%
All Courses	2	0	0%	0	0%	2	100%
CONS 386	2	0	0%	0	0%	2	100%

SLO 11.4 - Demonstrate continuous improvement

	Measures	Not Met		Met		Exceeded	
	N	N	%	N	%	N	%
All Courses	2	0	0%	1	50%	1	50%
CONS 385	1	0	0%	1	100%	0	0%
CONS 386	1	0	0%	0	0%	1	100%

Assessment results: What has the data told us?

- *SO 1: Select and Apply Knowledge, Techniques, Skills, and Tools*
  - *Outcome met*
  - *<u>Students struggle most on</u>: use of tools/instruments and software, knowledge of some specific topics*
  - *Not seeing many 300/400-level courses using software*
  - *Problems persist with NS-119 and AutoDesk that greatly impact CADD courses*
  - *Need Capstone to better evaluate this SO (spring course)*

- *SO 2: Ability to Select and Apply Math, Science, Engineering, and Technology to Applications and Analytical Problems*
  - *Outcome met*
  - *<u>Students struggle most on</u>: at the time of program completion students are good at application/use of science and math skills to solve problems, but they do struggle with this at the 100/200-level if you look at that course data – possible cause for retention issues*

Assessment results: What have the data told us?

- *SO 3: Be Able to Conduct Tests and Experiments*
  - *Outcome Met*
  - *Students struggle most on: testing and analysis in CONS 280 –> lack of asphalt mixing and testing equipment*
  - *Not seeing many 300/400-level civil/structural courses conducting experiments and analyzing data (well covered in 300/400 level environmental eng courses)*

- *SO 4: Design Systems, Components, or Processes*
  - *Outcome Met*
  - *Students struggle most on: concrete mix design*
  - *Students do well at 300/400-level, but need design code books*
  - *Not a lot of data – need to see CONS 477 and other design course results (spring term)*

Assessment results: What have the data told us?

- *SO 5: Team Member or Leader*
  - *Outcome Met*
  - *Did not have a lot of data to go on – in curriculum but not being assessed as individual course outcome*
- *SO 6: Problem Solving*
  - *Outcome Met*
  - *Need more data – will come with additional semesters*
  - *Students do well at 300/400 level*

Assessment results: What have the data told us?

- *SO 7: Communication Skills*
  - *Outcome Met*
  - *Students did well in all areas*
  - *Need to check mapping/course learning outcomes – know students in CONS 386 did not make good site maps, but that's not reflected in assessment results*
  - *Data didn't show that rough drafts of term projects had poor use of technical literature*

- *SO 8: Continual Professional Development*
  - *Outcome Partially Met*
  - *Could not be fully assessed this term based on 1) what classes were offered and 2) Need to incorporate non-course related measures (e.g. ASCE Student chapter activities) or non-course learning outcome activities (e.g. field trips)*

Assessment results: What have the data told us?

- *SO 9: Professionalism, Ethics, and Diversity*
  - *Outcome Met*
  - *Have course dedicated to these topics (SOET 377) and it is covered in other classes, but those classes do not all have it included in their assessment*

- *SO 10: Societal and Global Impact*
  - *Outcome Met*
  - *Have course dedicated to these topics (SOET 377) and it is covered in other classes, but those classes do not all have it included in their assessment*

- *SO 11: Quality, Timeliness, and Continuous Improvement*
  - *Outcome Met*
  - *Outcome is covered in the courses and program, but need to better assess – need data that only focuses on this outcome*

Evaluation of the Assessment Process

- **Program Assessment**:
  - Need to check the Program to Course mapping
  - Need to report on an entire academic year - 1 semester insufficient to show performance of the program.
  - We have a good sense of program performance based on our program assessment for ABET which we have been doing for decades with our 2yr Civil Eng. Tech. program and since 2010 for the 4yr program when it rolled out – it's important that as we get our program assessment into Taskstream that we use it not just for the needs of the University, but also for ABET assessment and reporting purposes.

- **Course Assessment**:
  - Need to check Course to Program mappings
  - Need to update course learning outcomes to include items needed at Program assessment level
  - Need an easier way to view course assessment feedback when evaluating program assessment

- **Taskstream**:
  - How do we integrate assessment data that is not course related and therefore cannot be mapped?
  - Would like to be able to map every course outcome up to a program outcome, but then only map down from the program level to the items we want to use in the program assessment. This shows everything that contributes to an outcomes at an earlier stage in the learning process; and would allow us to more easily adjust the program-down mapping. In addition, it allows us to generate the type of report that ABET wants.

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

- Hard to determine "close the loop" items at the program level with only looking one semesters worth of data – it is incomplete, major courses will not be offered until spring (e.g. CONS 477 not included yet!)

- **SO1:**
  - Need to evaluate why knowledge on some specific topics is weak and adjust curriculum accordingly (e.g. in CONS 280 not enough time is spent on masonry and asphalt and students did not demonstrate good knowledge on these topics – need to allot more time to these topics in class).
  - Need to incorporate use of software/tools more into 300/400-level course curriculum
  - Need additional design software for 300/400 structural design courses
  - Need to continue working with IT to resolve AutoDesk, N@-119, and remote server issues for CADD classes

- **SO2:**
  - Add additional math/science based problem solving assignments into class(es) with this issue to see if more practice will improve results.
  - Assess and evaluate another semester/academic years worth of data in order to determine if this is a systemic problem or a problem with a particular group of students. This may help to determine if it's the learning approach in the CONS course or lack of basic math/science skills from the math/science foundation courses.

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

- **SO3:**
  - Need to evaluate the department's need for asphalt mixing and testing equipment
  - Need to evaluate the department's need for structural testing equipment

- **SO4:**
  - Will provide simplified mix design procedure handout for concrete mix design when it is first introduced in class (CONS 280).
  - Need to get copies of design code books for instructor and class (e.g. reinforced concrete design code manual, structural steel code book, timber design code book, AASHTO high way design code book, etc.) – these are required materials for these classes and an industry standard. Students must learn design with them and learn how to use them. ABET and our IAB will expect us to use these in our design courses.

- **SO5:**
  - Need to revise course learning outcomes to include this program outcome as a measurable and assessed item (it is already included in the curriculum)

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

- **<u>SO6:</u>**
  - No close the loop items at this time, just need additional data to better assess this outcome

- **<u>SO 7:</u>**
  - Need to continue to use CADD, REVIT, Civil 3D, and GIS for drafting, design, and mapping in 300/400-level classes, need to look at and revise course curriculums to include additional assignments/projects that do this.
  - Need better rubric that allows for evaluation of use of technical literature and need to have a course learning outcome so it will be in Taskstream and mapable.

- **<u>SO 8-11:</u>**
  - Need to add non-course related measures (e.g. ASCE student chapter data) into Taskstream
  - Need to add outcomes 8-11 to select course outlines
  - CONS 477: Need to revise learning outcomes to better map to program SOs and need to better define minimum required content related to some of the harder to assess outcomes (professionalism, ethics, global/societal context, continuous improvement, etc.) to ensure they are always included in the project

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

- Individual faculty time revising within a course

- Department faculty time collectively reviewing course learning outcomes and Course ↔ Program outcome assessment mapping:
  - This is a necessity and since we are just getting this setup in Taskstream and are brining new program faculty up to speed with the whole process this will be/is a HUGE time sink
  - Need to review all course mappings
  - Need to review all program mappings
  - Need to revise course learning outcomes to include those that we know we need
  - Need to collectively evaluate assessment results together
  - Need to setup/program Taskstream to generate the different style reports we need for the University and for ABET
  - **Request 3 credit hour release time for the Program Coordinator to accomplish this.**

- Allocation of existing department funds:
  - Must maintain current budget at a minimum
  - Need to replenish materials used for testing and experiments (e.g. water quality testing) – part of why that outcome is so successful

- Request of divisional/college funds:
  - **$ for new structural design software (see next slide)**
  - **$ for design code books (see following slides) – first two and CONS 324 priority for next academic year course offerings, need desk copy and student class set of 4 or 5**

**This semester's assessment was primarily done on courses at the end of the program. In the future we need to look at every course that feeds into the program SOs so we can also obtain continuous improvement resources for the 100/200 level courses as well since they greatly impact retention in the program. **

Software and Code Book Info

- STRUCTURAL ANALYSIS SOFTWARE
  - *Software*: Full Version Risa 3D
  - *Cost*: $4,000 Stand-alone one license (looking into price for educational use)
  - *Source*: https://risa.com/secure/?type=Products
  - Use: CONS 304, CONS 324, CONS 370, CONS 375, CONS 477, ASCE Steel Bridge Competition, and any new design courses

Software and Code Book Info

- **Structural Engineering Code Book**
  - *Book*: IBC 2012
  - *Cost*: $135 List / $110.35 Amazon
  - *Source*: http://www.amazon.com/2012-International-Building-Council-Series/dp/1609830407
  - *Use*: CONS 304, CONS 324, CONS 370, CONS 375, CONS 477, ASCE Steel Bridge Competition, and any new design courses
- **Engineering Code Book:**
  - *Book*: ASCE 7-10
  - *Cost*: $165 List / $123.75 ASCE Member
  - *Source*: http://www.asce.org/templates/publications-book-detail.aspx?id=6725
  - *Use*: CONS 304, CONS 324, CONS 370, CONS 375, CONS 477, ASCE Steel Bridge Competition, and any new design courses

Software and Code Book Info

- **Reinforced Concrete Code Book**
  - *Book*: ACI 318-14
  - *Cost*: $249.50 List / $149.00 ACI Member
  - *Source*: https://www.concrete.org/store/productdetail.aspx?ItemID=31814
  - *Use*: CONS 304, CONS 375, CONS 477, and any new design courses related to topic
- **Structural Steel Code Book:**
  - *Book*: AISC Steel Construction Manual, 14th edition
  - *Cost*: $400.00 List / $135.00 Student
  - *Source*: https://www.aisc.org/store/p-1578-steel-construction-manual-14th-ed-fourth-printing-hardbound.aspx
  - *Use*: CONS 324, CONS 375, CONS 477, ASCE Steel Bridge Competition, and any new design courses related to topic

Software and Code Book Info

- **Timber Design Code Book**
  - *Book*: NDS 2015
  - *Cost*: $75.00 Member/Student
  - *Source*: http://www.awc.org/codes-standards/publications/nds-2015
  - *Use*: CONS 370, CONS 375, and CONS 477
- **Steel Bridge Design Code Book:**
  - *Book*: AASHTO LRFD Bridge Design Specifications, 7th edition
  - *Cost*: $746.00 List / $574.00 Member
  - *Source*: http://www.amazon.com/2012-International-Building-Council-Series/dp/1609830407
  - *Use*: CONS 324, CONS 372, CONS 375, CONS 477, ASCE Steel Bridge Competition, and any new design courses related to topic