# CSOET

Dean’s Symposium 2016

# ACMR

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

I plan on converting some of the traditional Lab Reports to a practical exam format.  I think this will better align the students to succeed when put on the spot alone.

# Budget requirement to aid in Critical Thinking (Charging & Recovery) improvement

1. A new charging scale is required $175
2. One new vacuum pump $375

# Recommendations for assessment process

- The assessment process as it is now is acceptable
- The rubrics made things more defined

# ENG Sci

# Comments from CU and graduates

**Short comes:**

1. Electrical — AC circuits & Digital/Logic
2. Chemical — Organic Chem I
3. Mechanical — Thermo in place of PHY III
4. Computer — Digital/Logic & prog.
5. Environmental — Biology I in place of PHY III

# How the program plans to fix the issues (close the loop)

- Eliminated PHYS III as a required course
- Made ENGS 203 a program elective course
- Developed & added ENGS 264 (AC/DC lab.)
- Added 6 program electives to the program:

1. BIOL 150
2. CHEM 301
3. MECH 342
4. MKTX 215/216
5. CITA 180
6. CHEM 302

Effective: Fall 2017

# What changes would you make to the Assessment Process?

Program Assessment:

Evaluate the final product (graduates)

Keep in touch with them (a few years)

Collect feedback from them

PSLOs are or are not met

# GMMD

# Assessment results: What have the data told us?

- Program objectives are assessed in multiple places throughout the curriculum
- Programs objectives are sometimes assessed in multiple methodologies within the same course

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

- This report will be shared on the department BB site

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

- We may discuss the possibility of a course fee for GMMD 102 to address the poor completion rate of the final printed assignment, or discuss an alternate assessment artifact

# What changes would you make to the Assessment Process?

- As mentioned above, as each objective appears in multiple courses, it is unnecessary to assess each objective each time.

# EET 2 Year AAS

# Assessment results: What have the data told us?

- Based on the data showing all of the Targets for the Outcomes were met or exceeded no further plans are needed at this time.

# What resources were used or have been requested to assist in supporting the recommendations for improving the courses?

None at this time.

# What changes would you make to the Assessment Process?

- Add an additional measure to the Program Assessment component of Taskstream to evaluate our Final Product (The Graduates).
    - Need to keep in touch with them (First five Years).
    - Collect feedback from them.

# ITM

- No requests
- Eric has a good philosophy of the program
- more access to required course.

# IT/CIS

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

- Revise the related courses including the course outlines to better align with the student learning outcomes

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

- Individual faculty time revising within a course
- Program and department faculty time making revisions spanning more than one course or adjusting the curriculum

# What changes would you make to the Assessment Process?

- Collect data directly from students too.

# Powersports

# Data-driven decisions

- AUTO 122- Outcome A122.3

  **Recommendations :** Try to recruit students who have the work ethic to show up for class and turn in their assignments.

  **Reflections/Notes :**

  - One student stopped showing up the second week of class and never dropped the course.
  - Another student either showed up late or not at all for the majority of the second half of the semester.
  - There was also an issue with students not handing in the work or handing it in partially done.

# Data-driven decisions cont.

- MSPT 110- Outcome 3

  **Recommendations :** The dynamometer needs to be updated and running.

  **Reflections/Notes :** Repair and updates to the dynamometer are needed along with the training to learn how to operate the dyno.

# Data-driven decisions cont.

- MSPT 110- Outcome 5

  **Recommendations :** All of the students calculated the ratio correctly but did not write the answer properly. In the future I need to stress to importance of writing the answer to the correct place value.

  **Reflections/Notes :** In the future I would like to have the students calculate the ratio of every gear in their lab transmission.

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

- MSPT 110- Outcome 3

  **Recommendations :** The dynamometer needs to be updated and running.

  - $2,137.52-Dynamometer repair, software, and training
  - $829.06-Desktop PC to run software
  - $299.99-Cooling fan
  - Total cost: $3266.57

# MET 2 yr

# Assessment results: What have the data told us?

- SLO#3 (Communications, ABET F) – 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 D, G, H) – 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?

- Students lack motivational skills (millennial generation issue)

  https://www.youtube.com/watch?v=Ba5F9VmClQk
- 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 make OSHA 10 hr. Certification graduation requirement
- 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

# MET 4 yr

# 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=Ba5F9VmClQk
- 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?

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# Const. Tech. Mgmt & Civil 2year

# Assessment results: What have the data told us?

Improvement over last year, but much information is lacking and requires more in depth study of posted report results..

Revisiting program outcomes. (Did that: loop closed)

Surveys are required. (Still not done)

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

Given these findings, what will the program do differently?

1. Options to clarify the assessment of SLO 5
    1. re-write so that it is measureable
    2. Introduce a construction-specific element to one of the business courses (this has been discussed)
    3. Eliminate it.

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

- Operational goal, replace Mr. B, has been resolved with the hiring of Mr. Reiter.
- We have not, as yet, identified any shortcomings in SLOs that would stimulate request for funds.
- Our biggest issue is low enrollment.  Perhaps funding of recruitment efforts could stimulate enrollment???

# ECM

# Assessment results: What have the data told us?

- SLO 1 – Install wiring systems
  - Last year, students struggled the most on drawing line and cable diagrams (ELEC 171 lab component)
    - Students did much better on this SLO this year following the acquisition of the projector.
- SLO 2 – National Electrical Code
  - Students performed well on this SLO
- ISLO Critical Thinking
  - Students need additional work on writing explanations and conclusions. Will provide write-up format guide to assist students in future semesters
- ISLO Communication
  - May need to move English to the 1st semester of the program as they are weak in the fall due to lack of English instruction.

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

- Add write-up format guide to ELEC 171 to assist with Critical Thinking performance
- Potentially move English to the 1st semester

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

- Needed resources received last cycle.

# Changes to the Assessment Process

- Both rubrics could be improved to better fit applied and certificate programs.

# Auto

# Assessment results: What have the data told us?

- **ALO1- Diagnose and repair**
  - Students struggled the most on:
    - Attendance and  persistence
    - Asking for extra help when they don't understand a concept (Auto 101, Auto 112)
- **ALO2 - Find  Information**
  - Students struggled the most on:
    - Knowing when they have mastered a task (Auto111, Auto122)
    - Attendance and persistence

# Assessment results: What have the data told us?

- **ALO3 - Service Procedures**
  - Students struggled the most on:
    - Following procedures, locating, reading, and comprehending (all courses). Simply doing homework
- **ALO4 - Safety Procedures**
  - Students ***are*** following safe work procedures:
    - Safety glasses, leather shoes, work clothing
    - Use tools and equipment safely (all lab courses)

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

- Given these findings, what will the department do differently?
  - Change teaching methods
    - **Tutoring and Review:** Started to create task videos to review specific methods, techniques, and diagnostic processes that are frequently difficult to grasp.
    - **Skill Building Practice Sessions:** Provide students an opportunity to practice and gain confidence when using tools, equipment and service information.

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

- Increase instructional support
  - **Practice Time:** Continue to give students time to practice on their personal car when the task relates to the automotive program i.e. Auto Club.
  - **Student Recruiting:** Request more help identifying motivated students for the program when recruiting students.
- Change assessment methods and/or measures
  - **Outcome Targets:** Automotive faculty will review, revise and evaluate learning outcome targets each semester.

# What resources are currently used to close the loop?

- Faculty and Instructional Support **time**:
  - Different auto courses are taught each semester. Resetting visual aids/props, moving equipment in and out of storage, and maintaining program NATEF standards all require substantial time and effort.
  - Student advising, tutoring, administrative duties and advising Auto Club all preformed by two faculty and one instructional support associate.
  - Maintaining accreditation for NATEF, Snap-On, and Subaru, mostly by one faculty member.
  - Expecting scholarly activity as well.

# What resources are being requested to close the loop?

- Potential resources that you might identify:
  - Increase Program faculty.
    - Adjust curriculum to align with NATEF standards in TaskStream.
    - Add course materials to BlackBoard and create online course.
    - Produce video instruction for students.
  - Increase program budget to maintain instructional equipment.
  - **Practice vehicles within 10 years old to be relevant.**

# Hurdle

- How do you install persistence in a student without it?
- Equipment becoming outdated, particularly our vehicles.
- Time

# Funds needed

- $304.30 for the thread pitch/fastener size gauges.
- Approximately $25,000 for a used vehicle with CAN communications and other features the students learn in multiple courses, unless we can find a totaled vehicle that meets our needs.  OR, multiple totaled vehicles would work well too.

# Civil & Env. Eng. Tech. 4 Year

# 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 Taskstsream 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.

# 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.

# 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.

- **SO3:**
  - 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.

# 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.

# ACET

# Data-driven decisions: “close the loop”

- Without dedicated faculty this program is running on cruise control and may end up stopping
- Enrollment is another issue.
- Math leveling to be admitted directly to program. Freshman class for Fall 2016 were all 001s.
- Name change may also help

# Resources necessary to close the loop:

- Dedicated faculty or share resources with others
- ENGM 101 Intro to Engineering Math Applications may solve admission requirements.
- Time to save this program

# What Learning Occurred Due to Assessment Process?

- Same discover as last year with program