BSE, Biomedical Concentration

📋 Program-1261

Annual Assessment Plan

1

2 **ULO 4A - ABET1**

an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

Outcome(s)

① Choose one or more accreditor outcome that aligns with your Program Learning Outcome.

There is no selected outcome.

② Choose one or more Institution outcome that aligns with your Program Learning Outcome.

There is no selected outcome.

③ **Please Enter The Following Information Below:**

Measures - Need to name specific course/ required experience plus exact exam items, assignments, rubric lines, etc. used for the analysis of performance on the PLO.

Targets - Percentage of students expected to earn a particular score on the measure.

Timeline - The frequency with which the department will analyze and report student performance on the PLO.

Measures	Targets	Timeline
ENGR 111 - Apply the steps of the Engineering Design process in working towards solution of a well-defined problem.	100% of students score 3/4 points or better	Once every two years, next cycle FY23
ENGR 112 - Complete a module of assignments each focused on specific uses of spreadhseets to solve engineering problems.	80% of students score 80% or better	Once every two years, next cycle FY23

Measures	Targets	Timeline
ENGR 211 1D - Assignment to create a Project Plan, including a work breakdown structure that defines and assigns the tasks on a timeline suitable for achieving project goals.	90% of students score 90% or better	Once every two years, next cycle FY23
ENGR 211 1E - Assignment to summarize learning from a client interview into a charter that defines project outcomes, outputs and performance metrics.	90% of students score 90% or better	Once every two years, next cycle FY23
ENGR 214 - A series of exam questions to measure student understanding of the relationship between macroscopic material properties (Young's modulus, conductivity) and material microstructure.	80% of students score 7/9 or better	Once every two years, next cycle FY23
ENGR 432 - Determine whether a pharmaceutical manufacturing process is in a state of control by constructing and analyzing x	80% of students score 27/30 points or better	Once every two years, next cycle FY 23

4 **Results -** Please enter numeric results, indicating the number and percentage of student performance meeting the target. Record faculty discussion about the strengths and weaknesses in student performance. *Please see the May Development section on the Assessment of Student Learning website for suggestions about how to process assessment results.

ENGR 111–F20: (Instructor Observations) 88% of the students demonstrated proficiency. Some of the students who did not demonstrate proficiency failed to mention all eight steps. The assignment already seems clear, but a note could be added emphasized that all the steps need to be included. I also suggest returning the item assessed to the design project. This would necessitate 1) directing students to perform testing during the design process, 2) reminding them to explicitly structure their report in terms of the eight steps, and 3) restructuring the grading rubric

accordingly. (Dept Observations) Upon reflection, we recognize that the language of the Engineering Design process is not emphasized as much as it should be later in the curriculum. In particular, it would help to reinforce these concepts by using the vocabulary and asking students to plan their work according to their stage in the design process, in both ENGR 211 Project Management and ENGR 415 Engineering Project.

ENGR 112-S21: (Instructor Observations) Over the last two years, 81.4% of the students (124 students) achieved an 80 or higher on their Excel assignments. In SP20, 90% of the 60 students working in teams of two achieved an 80 or higher. In SP21, 73.4% of the students, working individually, socially distanced with some remote, achieved an 80 or higher (though this data is impacted by a few students who chose not to perform and submitted very little work). These factors may have contributed to the decline in scores. Recommend that the course revert back to teams of two for Excel assignments in SP22. (Dept Observations) Agreed that this passes given that a few students were non-performers and that Spring 2020 data (when viewed retroactively) had passed.

ENGR 211 1D-S21: (Instructor Observations) 100% of students scored a 90% or higher on the Final Project Plan. Anecdotal observation concurs that students are doing well at developing SMART goals and work breakdown structures. (Dept Observations) Concur with instructor's observations.

ENGR 211 1E–S21: (Instructor Observations) (1) 81% of students scored a 90% or higher on the Project Charter. 100% scored an 80% or higher. Is the goal of 90% of students scoring 90% or higher too aggressive? (2) Permitting students to revise their charters based on feedback on the first draft would likely elevate outcomes. The Initial Project Plans also would not have passed the assessment criteria, but we assigned a second submission that benefits from feedback on the first submission and the class achieved a 100% pass rate. (Dept Observations) This assignment does not involve a resubmission cycle and therefore agree that contextually the proficiency threshold is too aggressive. Given that a resubmission cycle cannot be included for all assignments, maintain the focus on strong project plans and work breakdown structures where greater emphasis is already placed.

ENGR 214–F20: (Instructor Observations) Strictly speaking this assessment fails the threshold, though very narrowly - 78% of the students achieved a 7 out of 9 for these assessment questions that were at a higher level of thinking. There were several lower-performing students (3/9, 4.5/9, 5/9, 5/9, 5.5/9), but not so extreme or great in number to require remedial action. I think that student understanding of this foundational concept has improved since the last assessment cycle, and also think that this type of assessment (spread across multiple pointed questions) better assesses conceptual understanding. (Dept Observations) Concur with instructor.

ENGR 432–S21: (Instructor Observations) 84% of the students demonstrated proficiency. Most of those who scored below the target actually appeared to be able to create the charts correctly, but lost points because they forgot to include their initial chart. This suggests that the assignment instructions should be clarified to emphasize that two sigma charts may need to be included. I also believe it would help to reduce the total number of points in the assignment to combat grade inflation. (Dept Observations) Concur with instructor's observations.

5 **Action Plans** - If student performance did not meet the target, identify specific improvement strategies to enact in the upcoming academic year. For example, add instruction on the topic, change an assignment, revise course requirements, revise objectives, identify additional support/resources for students.

ENGR 111-F20: Make both the assignment-level changes proposed by the instructor and move towards incorporating design process terminology into ENGR 211 and ENGR 415.
ENGR 112–S21: Return to team-based learning post-COVID as this module was originally designed.
ENGR 211 1D–S21: Better integrate learning from ENGR 211, including work breakdown structure and risk identification/management in the ENGR 415 Engineering Project course.
ENGR 211 1E–S21: Update the proficiency target as recommended (90% achieve 80% or better). Consider explicitly sharing the charter document with the partner/client in order to raise the stakes on this effort.
ENGR 214–F20: Strive for uniformity across instructors as at least three faculty regularly teach this course. The learning from this assessment cycle will be passed to the other instructors.
ENGR 432–S21: Clarify assignment instructions and re-scale point values as suggested.

6 **Closing the Loop** - If you entered action plans for the PLO last year, they will appear in the box below. Please explain what you did to accomplish the action plan this year, re-examine student performance, and determine the success of your action plan.

ENGR 111-F20 Response to Action Plan: Since the previous assessment cycle, we have clarified the design process terminology that students should use (we were formally incorporating a textbook which did not match departmental terminology). Last time, we assessed this item using the final report of the design project, but due to eliminating the stress analysis software from the bridge option for the design project, that option did not have a testing component, and so we chose a similar assignment from the edible for assessment this time.
ENGR 112–S21 Response to Action Plan: Added individual-based quizzes related to the Excel learning module in order to promote improved individual accountability.
ENGR 211–S21 1D Response to Action Plan: Multiple sections of the course were run through a single instance of the course on Canvas, our Learning Management System. This was to facilitate the assessment of all students enrolled in the course,

rather than those enrolled in the section of the faculty member assigned the data collection task (in order to achieve a meaningful sample size).

ENGR 211 1E–S21 Response to Action Plan: Assignments re-weighted as recommended in the prior assessment cycle. Multiple sections of the course were run through a single instance of the course on Canvas, our Learning Management System. This was to facilitate the assessment of all students enrolled in the course, rather than those enrolled in the section of the faculty member assigned the data collection task (to establish a more meaningful sample size).

ENGR 214–F20 Response to Action Plan: Students were given more in-class problems and more homework assignments asking questions relating macroscopic properties to microstructure.

ENGR 432–S21 Response to Action Plan: This course was not taught during FY22. Action plan will be addressed when the course is taught Fall 2022.

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3 **ULO 6A - ABET2**

an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors

Outcome(s)

1 Choose one or more accreditor outcome that aligns with your Program Learning Outcome.

There is no selected outcome.

2 Choose one or more Institution outcome that aligns with your Program Learning Outcome.

There is no selected outcome.

3 **Please Enter The Following Information Below:**

Measures - Need to name specific course/ required experience plus exact exam items, assignments, rubric lines, etc. used for the analysis of performance on the PLO.

Targets - Percentage of students expected to earn a particular score on the measure.

Timeline - The frequency with which the department will analyze and report student performance on the PLO.

Measures	Targets	Timeline

Measures	Targets	Timeline
ENGR 432 - Designing a needs screening algorithm based on patient or clinician interviews that incorporates weighted factors such as	80% of students score 4/5 or better	Once every two years, next cyle FY23

4 **Results -** Please enter numeric results, indicating the number and percentage of student performance meeting the target. Record faculty discussion about the strengths and weaknesses in student performance. *Please see the May Development section on the Assessment of Student Learning website for suggestions about how to process assessment results.

> **ENGR 432–S21**: (Instructor Observations) 100% of the students demonstrated proficiency. I think the assignment is satisfactory as it currently stands, but could challenge and benefit students more if the assignment were slightly more advanced (for example, requiring multiple rounds of screening, or requiring references to back up the input data). (Dept Observations) Concur with instructor's observations.

5 **Action Plans** - If student performance did not meet the target, identify specific improvement strategies to enact in the upcoming academic year. For example, add instruction on the topic, change an assignment, revise course requirements, revise objectives, identify additional support/resources for students.

> **ENGR 432–S21**: Advance the level of the assignment, raising the expectation of students.

6 **Closing the Loop** - If you entered action plans for the PLO last year, they will appear in the box below. Please explain what you did to accomplish the action plan this year, re-examine student performance, and determine the success of your action plan.

> **ENGR 432–S21 Response to Action Plan**: This course was not taught during FY22. Action plan will be addressed when the course is taught Fall 2022.

4 **ULO 1A - ABET3**

an ability to communicate effectively with a range of audiences

Outcome(s)

1 Choose one or more accreditor outcome that aligns with your Program Learning Outcome.

There is no selected outcome.

2 Choose one or more Institution outcome that aligns with your Program Learning Outcome.

There is no selected outcome.

3 **Please Enter The Following Information Below:**

Measures - Need to name specific course/ required experience plus exact exam items, assignments, rubric lines, etc. used for the analysis of performance on the PLO.

Targets - Percentage of students expected to earn a particular score on the measure.

Timeline - The frequency with which the department will analyze and report student performance on the PLO.

4 **Results -** Please enter numeric results, indicating the number and percentage of student performance meeting the target. Record faculty discussion about the strengths and weaknesses in student performance. *Please see the May Development section on the Assessment of Student Learning website for suggestions about how to process assessment results.

5 **Action Plans** - If student performance did not meet the target, identify specific improvement strategies to enact in the upcoming academic year. For example, add instruction on the topic, change an assignment, revise course requirements, revise objectives, identify additional support/resources for students.

6 **Closing the Loop** - If you entered action plans for the PLO last year, they will appear in the box below. Please explain what you did to accomplish the action plan this year, re-examine student performance, and determine the success of your action plan.

5 **ULO 6B - ABET4**

an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts

Outcome(s)

1 Choose one or more accreditor outcome that aligns with your Program Learning Outcome.

There is no selected outcome.

2 Choose one or more Institution outcome that aligns with your Program Learning Outcome.

There is no selected outcome.

3 **Please Enter The Following Information Below:**

Measures - Need to name specific course/ required experience plus exact exam items, assignments, rubric lines, etc. used for the analysis of performance on the PLO.

Targets - Percentage of students expected to earn a particular score on the measure.

Timeline - The frequency with which the department will analyze and report student performance on the PLO.

Measures	Targets	Timeline
ENGR 301 -- Write a letter that takes a stance on a controversial topic relevant to engineers.	100% of students score 2/3 points or better	Once every two years, next cycle FY 23

4 **Results -** Please enter numeric results, indicating the number and percentage of student performance meeting the target. Record faculty discussion about the strengths and weaknesses in student performance. *Please see the May Development section on the Assessment of Student Learning website for suggestions about how to process assessment results.

ENGR 301–F20: (Instructor Observations) Nearly all the students understood the intent of this rubric item and made a good attempt at it. Some students did not fully address all aspects and some chose topics that were not a good fit for all aspects,

for example topics relating to space exploration, and perhaps should have been directed to other topics. (Dept Observations) This item technically fails, though narrowly so. The assignment should be updated to either have students explicitly address all relevant aspects, or to provide a reasonable alternative for cases where students choose a topic that is not a good fit for all aspects.

5 **Action Plans** - If student performance did not meet the target, identify specific improvement strategies to enact in the upcoming academic year. For example, add instruction on the topic, change an assignment, revise course requirements, revise objectives, identify additional support/resources for students.

> **ENGR 301–F20**: Update assignment parameters and re-assess early.

6 **Closing the Loop** - If you entered action plans for the PLO last year, they will appear in the box below. Please explain what you did to accomplish the action plan this year, re-examine student performance, and determine the success of your action plan.

> **ENGR 301–F20 Response to Action Plan**: Students will be directed away from topics that cannot assess this item to those that can.

6 **ULO 4B - ABET5**

an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

Outcome(s)

1 Choose one or more accreditor outcome that aligns with your Program Learning Outcome.

There is no selected outcome.

2 Choose one or more Institution outcome that aligns with your Program Learning Outcome.

There is no selected outcome.

3 **Please Enter The Following Information Below:**

Measures - Need to name specific course/ required experience plus exact exam items, assignments, rubric lines, etc. used for the analysis of performance on the PLO.

Targets - Percentage of students expected to earn a particular score on the measure.

Timeline - The frequency with which the department will analyze and report student performance on the PLO.

Measures	Targets	Timeline
ENGR 111 -- Assignment requesting that students identify their own typical roles with respect to team dynamics.	90% of students score 6/7 or better	Once every two years, next cycle FY23
ENGR 211 - Instructor, peer and self-evaluations of individual performance and contributions as a member of a project team.	80% of students score 90% or better	Once every two years, next cycle FY23
ENGR 415 - Instructor evaluations of individual performance and contributions as a member of a project team.	90% of students score "meets expectations" or better	Once every two years, next cycle FY23

4 **Results -** Please enter numeric results, indicating the number and percentage of student performance meeting the target. Record faculty discussion about the strengths and weaknesses in student performance. *Please see the May Development section on the Assessment of Student Learning website for suggestions about how to process assessment results.

ENGR 111 5C–F20: (Instructor Observations) 92% of the students demonstrated proficiency, passing our goal of 90%. Perhaps this goal needs to be raised to 100%? Many of the students who did not pass submitted responses of insufficient length. Perhaps we need to clarify that two sentences do not typically constitute a "paragraph" of sufficient length to satisfactorily address the prompt. (Dept Observations) Agreed that for the future assessment cycle the target should be raised. Furthermore, improved clarity on the assignment, in terms of acceptable length of the deliverable, is advised.

ENGR 211–S21: (Instructor Observations) (1) The pass rate was 84% of students scored 90% or higher. 92% of students scored 80% or higher. (2) If high/medium/low samples of completed rubrics are needed, a way must be found to capture these from Canvas or we could return to completing the rubrics in Excel. (3) Teamwork instruction and assessment rigor are not uniform among members of the faculty team. This could lead to an artificially high pass rate on the assessment. One solution would be to provide a course coordinator who is either loaded or incented by departmental service to orient members of the faculty team as they join or return to the course regarding the instructional and evaluation process and the expected rigor associated with this this assessment exercise. (Dept Observations) Students are generally good in a collaborative teamwork environment coming out of this course as observed in ENGR 415. There remain a small number of non-performers who do not engage in the course or with the team's efforts and more needs to be done to hold those students accountable for non-performance in both this course and ENGR 415.

ENGR 415-S21: (Instructor's Observations) As 89% of the students have met the proficiency goal, technically we have not met this goal. This semester, however, was unique in that we had a number of students who not engaged at all in the course. For some of the students, the issue was that they were remote. (Department's Observations) The circumstances of an unusual year have impacted this assessment. The presence of numerous remote students, plus more students than typical who became completely un-engaged academically, pulled down the data set. We anticipate much of this self-correcting upon return to a traditional/normal learning environment. Still there is a need to better hold non-performing students accountable.

5 **Action Plans** - If student performance did not meet the target, identify specific improvement strategies to enact in the upcoming academic year. For example, add instruction on the topic, change an assignment, revise course requirements, revise objectives, identify additional support/resources for students.

ENGR 111 5C–F20: Adjust target. Improve clarity of expectations.
ENGR 211–S21: In future make peer assessments visible to instructors prior to grading (making students aware of this) so that instructors have more data at the time of grading. Hold non-performers (such as poor attendance) accountable.
ENGR 415–S21: Develop a "probation" plan for students who are under-performing.

6 **Closing the Loop** - If you entered action plans for the PLO last year, they will appear in the box below. Please explain what you did to accomplish the action plan this year, re-examine student performance, and determine the success of your action plan.

ENGR 111 5C–F20 Response to Action Plan: In the previous assessment cycle, we realized that for such a submission so early in the first semester of college, the assignment probably needs to more explicitly state the expectation that the vocabulary of the reading be applied in the reflection that follows. Since then, the assignment has been reworded accordingly.

ENGR 211–S21 Response to Action Plan: (1) A individual performance reflection worth 20 points was added to the assessment, thereby increasing the total points associated with the Final Individual Performance Evaluation from 80 to 100. (2) An extra credit portion was removed from the Final Individual Performance Evaluation, making it slightly more difficult to achieve the target proficiency score of 90/100 or better. (3) While the initial, mid-term and final performance evaluations provide relevant artifacts and data, we clarified that proficiency is based solely on the Final Individual Performance Evaluation.

ENGR 415–S21 Response to Action Plan: Updated proficiency definition since prior cycle.

7 **ULO 4C - ABET6**

an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

Outcome(s)

1 Choose one or more accreditor outcome that aligns with your Program Learning Outcome.

There is no selected outcome.

2 Choose one or more Institution outcome that aligns with your Program Learning Outcome.

There is no selected outcome.

3 **Please Enter The Following Information Below:**

Measures - Need to name specific course/ required experience plus exact exam items, assignments, rubric lines, etc. used for the analysis of performance on the PLO.

Targets - Percentage of students expected to earn a particular score on the measure.

Timeline - The frequency with which the department will analyze and report student performance on the PLO.

Measures	Targets	Timeline

Measures	Targets	Timeline
ENGR 213 - Students complete a project that requires hypothesis generation, data collection, and statistical analysis.	80% of students score 2/3 or better	Once every two years, next cycle FY23
ENGR 213 - Students complete a project that requires hypothesis generation, data collection, and statistical analysis.	80% of students score 3 or better	Once every two years, re-assess Fall 2021

4 **Results -** Please enter numeric results, indicating the number and percentage of student performance meeting the target. Record faculty discussion about the strengths and weaknesses in student performance. *Please see the May Development section on the Assessment of Student Learning website for suggestions about how to process assessment results.

> **ENGR 213 6B–S21**: (Instructor Observations) More than 80% of the groups scored a 2; however, some of those that scored a 2 had their hypothesis statement spread out over a few sentences rather than explicitly stated in one sentence. That is, they did have a valid hypothesis and did meet the requirements of the assignment, but a more clear statement would have been helpful. I met with each group to clarify the hypothesis. (Dept Observations) Concur with instructor's observations.
> **ENGR 213 6C–S21**: (Instructor Observations) 6/8 (75%) scored 3, with one 2 score (87.5% 2 or 3) and one 1 score. The scores approached the targets of 80% of scores being 3 and 90% of the targets being 2 or 3. Most groups had clear submissions and showed good understanding of what a hypothesis is and how data is used to evaluate that hypothesis. The group that scored a 2 had language that was somewhat unclear and incorrectly said they "accepted" the null hypothesis rather than "failed to reject". The group that scored a 1 showed understanding of the hypothesis but neglected to discuss how it matched their results. In the future I will provide good examples of this particular assignment. (Dept Observations) Student technical writing deficiency gets in the way of success on this item, and perhaps needs to be reinforced here. Even things that they perhaps consider to be obvious (such as results from a graph) still need to be said explicitly.

5 **Action Plans -** If student performance did not meet the target, identify specific improvement strategies to enact in the upcoming academic year. For example, add instruction on the topic, change an assignment, revise course requirements, revise objectives, identify additional

support/resources for students.

ENGR 213 6B–S21:: In future offerings, the assignment will ask for an opening one-sentence hypothesis statement and this will be explained and clarified in class.
ENGR 213 6C–S21: Re-assess Fall 2021. Better emphasize proper framework for a summary conclusion. Return to individual-based assignment.

6 **Closing the Loop** - If you entered action plans for the PLO last year, they will appear in the box below. Please explain what you did to accomplish the action plan this year, re-examine student performance, and determine the success of your action plan.

ENGR 213 6B–S21 Response to Action Plan: Added example hypothesis statements to instructional materials.
ENGR 213 6C–S21 Response to Action Plan: Example projects presented. Students present their project to the class and instructor before assignment is due. (This assessment cycle the artifact was scored as a group assignment; previously it had been individual-based.)

8 **ULO 1B - ABET7**

an ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Outcome(s)

1 Choose one or more accreditor outcome that aligns with your Program Learning Outcome.

There is no selected outcome.

2 Choose one or more Institution outcome that aligns with your Program Learning Outcome.

There is no selected outcome.

3 **Please Enter The Following Information Below:**

Measures - Need to name specific course/ required experience plus exact exam items, assignments, rubric lines, etc. used for the analysis of performance on the PLO.

Targets - Percentage of students expected to earn a particular score on the measure.

Timeline - The frequency with which the department will analyze and report student performance on the PLO.

Measures	Targets	Timeline
ENGR 112 - Students complete a software module for the CAD software of their choice (to be aligned with their future discipline). This learning is done via software tutorials outside of class with no direct instruction, modeling the way new software might be learned in professional practice.	80% of students score 80% or better	Once every two years, next cycle FY23
ENGR 302 - ELI assessment question: Describe two transferable skills acquired during the experience.	100% of students score 3/4 or better	Once every two years, next cycle FY23
ENGR 302 - ELI question: Identify a skill area in need of growth.	100% of students score 3/4 or better	Once every two years, next cycle FY23
ENGR 432 - Device a testing plan assignment (Write a device testing plan using ISO standards)	0% of students score 27/30 or better	Once every two years, next cycle FY23

4   **Results -** Please enter numeric results, indicating the number and percentage of student performance meeting the target. Record faculty discussion about the strengths and weaknesses in student performance. *Please see the May Development section on the Assessment of Student Learning website for suggestions about how to process assessment results.

ENGR 112–S21: (Instructor Observations) Overall, the 77% of the students were at a final exam grade of 80% or above. While technically this is below the target, given the special difficulties of this semester, I do not propose any changes and suggest looking again in the next assessment cycle. (Dept Observations) Agreed that this was

a difficult learning environment (remote students, etc.) and therefore we are not proposing action at this time. We observe that many students are not carefully following all steps of learning tutorials (that phenomenon exists beyond this course module). All three of these software packages are reinforced later in the curriculum in their respective disciplines.

ENGR 302 7A–F20: (Instructor Observations) 88% of the students demonstrated proficiency. Some of the students who did not demonstrate proficiency failed to follow the instructions to use specific examples or to tell a brief story rather than merely state generalities. Other students simply wrote responses of inadequate length. Based on this, I suggest two improvements to the assignment. First, we can include examples of Basic, Proficient, and Exemplary responses in the problem statement to give students a better sense of what they are aiming for. Second, we can provide a suggested minimum word count to help clarify the length expectations. (Dept Observations) Concur with the instructor's observations.

ENGR 302 7C–F20: (Instructor Observations) 84% of the students demonstrated proficiency. Some of the students who did not demonstrate proficiency failed to follow the instructions to use specific examples or to tell a brief story rather than merely state generalities. Other students simply wrote responses of inadequate length. Based on this, I suggest two improvements to the assignment. First, we can include examples of Basic, Proficient, and Exemplary responses in the problem statement to give students a better sense of what they are aiming for. Second, we can provide a suggested minimum word count to help clarify the length expectations. (Dept Observations) Concur with instructor's observations.

ENGR 432–S21: (Instructor Observations) 100% of the groups demonstrated proficiency, which did not surprise me since I walked them through the sections in the standard one at a time. I think this was a beneficial exercise, but realized afterward that I should have provided more specific instructions in order to increase the quality of the submissions. I think they would gain more from the exercise if I required them to do more independent analysis of the standard, rather than helping them interpret it one paragraph at a time. (Dept Observations) Concur with instructor's observations.

5 **Action Plans** - If student performance did not meet the target, identify specific improvement strategies to enact in the upcoming academic year. For example, add instruction on the topic, change an assignment, revise course requirements, revise objectives, identify additional support/resources for students.

ENGR 112–S21: This module has been done entirely outside of class time. In the future, provide occasional face[1]to-face touch points for these student cohorts with the module instructor to promote student engagement with the CAD module.
ENGR 302 7A–F20: Improve assignment clarity, as described, and re-assess early.
ENGR 302 7C–F20: Improve assignment clarity, as described, and re-assess early.
ENGR 432–S21: Update execution of the exercise to require more independent study of the standard.

6 **Closing the Loop** - If you entered action plans for the PLO last year, they will appear in the box below. Please explain what you did to accomplish the action plan this year, re-examine student performance, and determine the success of your action plan.

> **ENGR 112–S21 Response to Action Plan**: Now using "GraderWorks" to provide more accountability in the prior course (ENGR 111) to improve student Solidworks skills.
> **ENGR 302 7A–F20**: In the previous assessment cycle, 100% of students passed because proficiency was defined simply as completing the assignment, and the several ELI questions were all graded with a single score. We decided this target was insufficiently ambitious. In response, we revamped our grading scheme to a 4-point scale (4 = Exemplary; 3 = Proficient; 2 = Basic; 1 = Below Basic), and graded each question individually. We also helped students craft stronger responses by adding the explanation in the prompt about using concrete, specific vignettes.
> **ENGR 302 7C–F20**: In the previous assessment cycle, 100% of students passed because proficiency was defined simply as completing the assignment, and the several ELI questions were all graded with a single score. We decided this target was insufficiently ambitious. In response, we revamped our grading scheme to a 4-point scale (4 = Exemplary; 3 = Proficient; 2 = Basic; 1 = Below Basic), and graded each question individually. We also helped students craft stronger responses by adding the explanation in the prompt about using concrete, specific vignettes.
> **ENGR 432–S21 Response to Action Plan**: This course was not taught during FY22. Action plan will be addressed when the course is taught Fall 2022.

2 Holistic program improvement goals: Programs are expected to have at least one action plan to improve student learning annually. If you have not yet identified an action plan associated with this year's assessment results, or if the department has identified additional issues that require action plans, describe the specific, measurable action plan and its relation to evidence of student performance.

Assessment Rubric

1

Process

	1	2	3	4

	1	2	3	4
Is the plan being implemented faithfully and revised as needed?	○ Assessment plan is not implemented.	○ Most aspects of plan are being implemented or all aspects are implemented to some degree.	○ Assessment plan is fully implemented.	○ Plan is faithfully executed and modified/evaluated as needed.

2 Explanations:

3

Engagement

	1	2	3	4
Are all relevant parties are meaningfully involved in the creation/revision, implementation, analysis, interpretation and learning improvement process?	○ Limited involvement beyond chair/director	○ All educators contributing to the curriculum are aware of process and results	○ All educators contributing to the curriculum participate in conversations regarding the use of assessment data to improve student learning	○ All relevant stakeholders (students, employers, alumni) are meaningfully involved in the creation/revision, implementation, analysis, interpretation, and/or improvement processes associated with this assessment plan.

4 Explanations:

5 Program Learning Objectives

	1	2	3	4
	◯	◯	◯	◯
Are the program learning objectives clear, measurable, aligned with ULOs/GLOs, and representative of the range of learning for that major/program?	PLOs are problematic (vague, abstract, not aligned with ULOs/GLOs) or missing.	PLOs are clear, mostly measureable, partially aligned with ULOs/GLOs.	PLOs are clear, measureable, aligned with ULOs/GLOs, and represent a summary of the knowledge, skills, beliefs, and values that a graduate of this major/program should attain by completing the required curriculum, accounting for variations in learning outcomes due to tracks/concentrations	PLOs are clear, measurable, aligned with ULOs/GLOs, and representative of the range of learning students achieve through completion of the program. The learning objectives provide a comprehensive view of the knowledge, skills, beliefs, and values that are important for a graduate of this major/program and account for variations in learning outcomes due to tracks/concentrations.

6 Explanations:

7 Measures

	1	2	3	4

	1	2	3	4
	○	○	○	○
Are the instruments used to assess learning relevant to the objective? Do measures yield information/data you can use to drive improvement?	Not all objectives have a measure identified. OR Measures do not directly connect to the objectives.	All objectives have at least one direct measure. Measures connect to learning objectives superficially or tangentially and/or include learning other than stated objectives. Relies almost exclusively on the same form of assessment (survey, exam, project). Relies almost exclusively on data from a single source (course, program, activity).	All objectives have at least one direct measure. Some objectives have multiple measures. Measures clearly connect to learning objectives. And two of the following four criteria: Objective measures more than one point in time (formative). Indirect measure are used strategically. Plan Incorporates different forms of assessment (survey, exam, project). Plan incorporates from a variety of sources (course, program, activity).	Measures meet all of the following criteria: All objectives have at least one direct measure. Some objectives have multiple measures. Measures clearly connect to learning objectives. Objectives measured more than one point in time (formative). Indirect measures are used strategically. Plan incorporates different forms of assessment (survey, exam, project). Plan incorporates data from a variety of sources (course, program, activity).

8 Explanations:

9

Targets

	1	2	3	4

	1	2	3	4
Are the targets based on professional standards and/or analysis of past student work? Are targets challenging and achievable?	○ Some targets are missing.	○ Targets are arbitrarily chosen or reflect minimal expectations.	○ Targets are challenging and achievable based on prior student performance, and reflect an appropriate level of performance.	○ Targets are challenging and achievable. Targets are based on professional standards and/or prior student performance. Targets are set at a level to inspire program improvement.

10 Explanations:

11

Timeline

	1	2	3	4
Is the timeline for data collection manageable with sufficient data points to effectively inform decision making and program review?	○ Not identified clearly for all measures.	○ Clearly states semester/year for each objective/measure. Data analysis delayed from data collection. Time between collection points may not facilitate informed decision making.	○ Clearly stated and manageable schedule. At least two data points for each objective per review cycle.	○ Timeline for data collection is manageable and allows for continuous improvement with timely and meaningful decision making even before program review.

12 Explanations:

13 Action Plan

	1	2	3	4
	◯	◯	◯	◯
Is the department effectively examining and using assessment data to revise curriculum and pedagogy to support student learning?	Assessment data not collected/analyzed/used for decisions and/or results not documented in AEFIS.	Data collected, documented and discussed by department. Department reviewed confidence in measures and data as sufficient indicators of student performance. If data indicated changes were needed, action plans were developed in consultation with dean (e.g. improving outcomes, measures, targets, curriculum or pedagogy).	Data collected, documented and discussed by department. Department and dean confirmed confidence in measures and data as sufficient indicators of student performance. Action plans (e.g. improving outcomes, measures, targets, curriculum or pedagogy) developed in consultation with dean. If prior year data warranted action plans, the department implemented the changes.	Department collected and discussed follow-up data after the implementation of action plans in order to determine whether changes resulted in improvement or whether additional action is necessary. Data confirms effective curriculum and pedagogy for learning outcomes. Score of 4 should be assigned only if objectives, measures, targets and timeline all score a 4.

14 Explanations:

15 Dissemination

	1	2	3	4

	1	2	3	4
Is the department communicating learning objectives, results and improvements related to student learning to a wide audience?	○ No record of assessment results and changes made as a result of assessment findings.	○ The department/program retains records of assessment results and positive changes made as a result of assessment findings, and results are entered in assessment software system.	○ The department/program retains records of assessment results and changes made as a result of assessment findings, results are entered in assessment software system, and assessment results and improvements are publicly posted.	○ The department/program retains records of assessment results and changes made as a result of assessment findings, and results are entered in assessment software system. Assessment results and improvements are publicly posted and shared proactively with faculty, prospective students, employers and alumni in ways that facilitate their discussion.

16 Explanations:

Additional Feedback

1 Please enter any additional feedback for changes that should be made:

CLOSE AND EXIT