Academic Program Assessment Report for AY 2018-2019 **Program:**__BS in Egineering_____

(Due: May 1, 2019) **Date report completed:** _June 26 2019____

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Please describe the 2018-2019 assessment activities and follow-up for your program below. Please complete this form for each undergraduate major, minor, certificate, and graduate program (e.g., B.A., B.S., M.S.) in your department. Please copy any addenda (e.g., rubrics) and paste them in this document, save and submit it to both the Dean of your college/school and to the Assistant Provost as an email attachment before June 1, 2018. You'll also find this form on the assessment website at https://www.csupueblo.edu/assessment-and-student-learning/resources.html. Thank you.

Brief statement of Program mission and goals:

I. Assessment of Student Learning Outcomes (SLOs) in this cycle. Including processes, results, and recommendations for improved student learning. Use Column H to describe improvements planned for 2018-2019 based on the assessment process.

A. Which of the program SLOs were assessed during this cycle? **Please include the outcome(s) verbatim from the assessment plan.**	B. When was this SLO last reported on prior to this cycle? (semester and year)	C. What method was used for assessing the SLO? **Please include a copy of any rubrics used in the assessment process.**	D. Who was assessed? Please fully describe the student group(s) and the number of students or artifacts involved (N).	E. What is the expected proficiency level and how many or what proportion of students should be at that level?	F. What were the results of the assessment? (Include the proportion of students meeting proficiency.)	G. What were the department's conclusions about student performance?	H. What changes/improvements to the program are planned based on this assessment?
4. an ability to recognize ethical and professional responsibilities in engineering situations and	Never in this specific form. We revised our SLOs to match	We reviewed the assessment of this SLO from individual classes.	All students in each of the classes were assessed, using specific assignments in each class.	The level differed by class. Most were that 80% of students achieve 50%	See below.	See below.	None. See below.

make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.	new ABET SLOs. The new SLO 4 includes old SLOs (f), (j), and (h)			or better on the assessment.			

Comments on part I:

Regarding item F, Professor Fraser reported to the faculty at the 26 April 2019 Department meeting:

> The goals were almost all met and we have evidence that our students were meeting (f), (h), and (j). The major issue was the lack of discussion of contemporary issues outside of sustainability. The new outcome 4 (1) eliminates any mention of contemporary issues and (2) combines ethics and sustainability. These changes will eliminate the problem we had (limited discussion of contemporary issues), but I recommend we continue to bring contemporary issues into the classroom, such as the VW scandal and the role of automation in changing future jobs for engineers and for everyone.

The notes from that meeting include:

> We agreed that we should continue to discuss contemporary issues (Boeing crashes, Boeing production issues, privacy, AI algorithms). We think we are doing a good job on integrating ethics and sustainability throughout the curriculum. We think the seniors do fine on discussing sustainability in their senior project reports. In ethics, Leonardo uses the same case study in EN 101 and EN 486; the EN 101 students are asked to identify the issues and the seniors do calculations to support their conclusions. Ebisa uses a class project and has students identify the ethical issues and impacts on society. The syllabus and rubrics for EN 487/488 need to be updated to reflect this new outcome 4.

For this outcome, no assessments were done separately for the BSE and BSIE students; therefor this report is for both programs. Other outcomes are assessed separately for the two programs.

II. Closing the Loop. Describe at least one data-informed change to your curriculum during the 2018-2019 cycle. These are those that were based on, or implemented to address, the results of assessment from previous cycles.

A. What SLO(s) or other issues did you address in this cycle? **Please include the outcome(s) verbatim from the assessment plan.**	B. When was this SLO last assessed to generate the data which informed the change? Please indicate the semester and year.	C. What were the recommendations for change from the previous assessment column H and/or feedback?	D. How were the recommendations for change acted upon?	E. What were the results of the changes? If the changes were not effective, what are the next steps or the new recommendations?

Comments on part II:

This year we focused on revisions of our assessment plan to bring our student outcomes into alignment with the new ABET outcomes. We revised our assessment handbook (the new version is attached), we had our advisory board discuss and approve the changes to the student outcomes, and we revised all EN syllabi to reflect the changes shown in the chart. This was a major undertaking.

Table 2. Changes in Criterion 3 - Student Outcomes

Current Language EAC Criteria effective 2017-18 and 2018-19 Cycles	New Language Approved by the EAD October 20, 2017 Applicable beginning in the 2019-20 cycle
Criterion 3. Student Outcomes The program must have documented student outcomes that prepare graduates to attain the program educational objectives. Student outcomes are outcomes (a) through (k) plus any additional outcomes that may be articulated by the program.	**Criterion 3. Student Outcomes** The program must have documented student outcomes that support the program educational objectives. Attainment of these outcomes prepares graduates to enter the professional practice of engineering. Student outcomes are outcomes (1) through (7), plus any additional outcomes that may be articulated by the program.
(a) an ability to apply knowledge of mathematics, science, and engineering (e) an ability to identify, formulate, and solve engineering problems	1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
(b) an ability to design and conduct experiments, as well as to analyze and interpret data	6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
(c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability	2. 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
(d) an ability to function on multidisciplinary teams	5. 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
(f) an understanding of professional and ethical responsibility (h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context (j) a knowledge of contemporary issues	4. 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
(g) an ability to communicate effectively	3. an ability to communicate effectively with a range of audiences
(i) a recognition of the need for, and an ability to engage in life-long learning	7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies
(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.	Implied in 1, 2, and 6

Source: http://www.abet.org/wp-content/uploads/2018/03/C3_C5_mapping_SEC_1-13-2018.pdf