General Education  
Annual Course Assessment  

Course: Engineering 100w  
GE AREA: AREA Z and AREA R  
Results reported for: AY 2014/2015  
# of Sections: 19  
# of Instructors: 10  
Course Coordinator: Stacey Knapp  
Email: Stacey.Knapp@sjsu.edu  
Department Chair: Ahmed Hambaba  
College: College of Engineering  

PART I:  
What SLOs were Assessed?  

AREA Z SLO #1:  
Produce discipline specific written work that demonstrates upper-division proficiency in:  

- Language Use  
- Grammar  
- Clarity of Expression  

and  

AREA R SLO #2: Students will be able to distinguish science from pseudo-science.  

PART I. AREA Z (Written Communication) SLO #1 Assessment Results  

All enrolled engineering 100w students must take the Exit Exam in order to pass the course. 419 students completed the Exit Exam in fall 2014.  

The Exit Exams were scored by an outside evaluator using a rubric with a scale of 1-12.
The Exit Exam is a timed writing assignment that asks students to solve/analyze/explain an environmental problem given a particular set of circumstances. Students must write a memorandum focused on an environmental issue (that was addressed during the “GreenTalk” series), target a particular audience, and thoroughly explain their reasoning. 100w instructors must draw upon the “GreenTalk” guest speaker series to write the exam prompts. All exams are administered with the same time and length limits, but each section is assigned a different prompt. All prompts are “normed” by the coordinator and must ask students to apply their knowledge of Environmental Science and propose a recommendation and/or formulate an argument addressed to a particular audience.

Since AREA Z SLO #1 is essential for students’ success in the field of engineering, faculty set the standard at 8 even though a score of 7 is considered a “passing” grade on the Exit Exam.

All scores below 8 were considered “below standard.” Scores of 8 were considered “at standard.” Scores of 9 were categorized as “above standard.” And scores of 10 or higher were classified as “exceeds” standard.

On April 22, 2015, 100w faculty discussed the results of this SLO assessment. As Coordinator, I developed the visual representation above in order to facilitate the conversation. Nine 100w faculty were in attendance at this meeting. Faculty expressed concern that 20% of students fell into the “below standard” category. Others said this was not surprising given the number of incoming students who arrive in the course underprepared for upper-division writing.

**Average of % Change by Instructor**

- [blank]
- Zou, Lin
- Tran, Shawn N
- Sansone, Victoria Jawad
- Murphy, Wesley, Barbara J
- Melvin, Janelle M
- Mackie, Joshua
- Knapp, Stacey Lynn
- Hsia, Bonnie L
- Haley, Daniel J
- Evans-Wemusa, Stephanie Lavelle
- Cordero, Clare M

- **WST Score**: Average 8.02
- **Exit Exam Score** Average: 8.24

In Fall 2014 the 100w program as a whole showed a .22 percent increase in average outgoing scores compared to incoming WST scores.
LESSONS LEARNED

Lesson One: Faculty agreed that the practice of administering a diagnostic writing exercise in the first one-two class sessions (in order to identify under-prepared students) remains highly important for this student population. At a subsequent meeting (August 28), faculty were all informed that the funding for 81W ended Fall 2015. Faculty agreed with Director Hsu that the COE should add 90W in spring 2016 in order to support 100w students who fail the Fall 2015 Exit Exam (Note: most of the students who fail the Exit Exam fail the course because 20% of the course grade is then calculated at zero). Faculty reaffirmed the importance of one-on-one tutoring support for the COEs lowest performing students, and faculty agreed to encourage under-performing students to attend 90W.

Lesson Two: During the April faculty meeting, faculty briefly considered the following changes as reported by Coordinator Knapp: 1) The multiple choice section of the exam has been eliminated, 2) a score of a “6” no longer passes; all students must now obtain a 7 on the WST in order to pass the exam, 3) students are now required to fail the WST at least twice before they are eligible for English 100a (A “C” or higher in 100a substitutes the WST as a pre-requisite for 100w), and 10 minutes has been added to the WST testing period.

Faculty considered adding more time to maintain consistency between WST changes and the Exit Exam. Some faculty expressed that we are not giving English as a Second Language (ESL) students enough time to complete the Exit Exam. Other faculty raised concerns about the impact of increasing Exit Exam time on the outside evaluators’ work load. Coordinator Knapp pointed out that 100w Exit Exams should all be set at 1.5 page-maximum, according to current Exit Exam directions and therefore the evaluators’ workload should not increase. Coordinator Knapp agreed to write up new standardized Exit Exam directions (3-5 sentences) that all faculty would include on their Exam prompts to maintain consistency regarding maximum length of submission and exam writing time.

Lesson Three: Faculty agreed the program must better support ESL students by incorporating more sentence-level writing instruction across all sections. Faculty brainstormed and shared techniques for incorporating sentence-level instruction.

PART III. What modifications to the course are planned?

Proposal Action

1. Update Curriculum

Three primary lessons emerged from faculty brainstorm and it was agreed that all faculty would incorporate at least one of the following:

a. Incorporate Editing Software: The coordinator agreed to share Criterion
software information with all 100w faculty and to conduct a brief training seminar on how to incorporate Criterion into classroom instruction during a faculty meeting. Faculty also requested more information on the College Handbook, Everyday Writer, “X-Book” online tools and agreed this tool needs to be further investigated; however, faculty noted that that status of College Handbook is unknown as the distribution of the free link to incoming freshman may not be continuing.

b. **Learner-Center Activity 1**: Incorporate “peer review” sessions wherein students utilize a rubric to “mark up” peers’ memorandum submissions and then share findings with the whole class. The instructor then reviews key sentence-level lessons that emerge from class discussion.

And/Or

c. **Learner-Centered Activity 2**: Copy sentences from student writing and give all students a handout with these sentences. Ask students to use the Everyday Writer to identify the grammatical error in the sentence and revise the sentence. The document camera can then be utilized to present these corrections to the class and the instructor can provide instruction that links sentence-error to lesson in the Everyday Writer.

2. **Add more time to the Exit Exam to maintain consistency with WST change**

According to the COE website, in Fall 2014 more than 30 percent of the COEs student population is categorized as “foreign born.” Although there is no data available regarding primary language for U.S born COE students, 27% of students identified as Asian and 14% constitute the COE’s Hispanic population. Empirical evidence makes clear that non-native English speakers require more time to effectively revise than native English speakers. Therefore, adding a minimum of 10 minutes to the Exit Exam beginning in Fall 2015 will better support multilingual students. Since 10 minutes was recently added to the WST, updating this aspect of the Exit Exam also keeps 100w program data consistent. Every semester we compare students’ incoming WST scores with outgoing Exit Exam scores to document performance growth. This change will keep our 100w program data consistent with previous program data. Because the WST time increased, our Exit Exam timing should also increase, or we are at risk of showing a lower rate of performance growth each semester.

3. **Add 90W to better support multilingual and international populations**

According to the Fall 2014 semester data, about 38 students failed the Exit Exam. These students can be referred/notified by the department about the option of taking 90W after they fail the Exit Exam. After the semester begins, faculty agreed to refer students based on an in-class diagnostic (already a practice due to 81W). 90W could be open to all Engineering students with preference given to currently enrolled 100w students (Instructor Consent). Two sections of 90W would most likely be sufficient.

**PART I. AREA R Earth and the Environment**
SLO #2: Students will be able to distinguish science from pseudo-science.

PART II. Results

Coordinator Knapp developed a rubric to be used for the assessment and provided copies to faculty during a regularly scheduled faculty meeting. Nine faculty members were present at this discussion and provided meaningful feedback that was incorporated into the rubric. Faculty agreed to utilize the rubric to assess the same standardized assignment, Formal Paper #2: “Analysis of a a Peer-Reviewed Journal Article Memorandum.” Faculty were instructed to collect a random sample of student papers and write a brief report summarizing their findings. Eight faculty submitted reports to Coordinator Knapp and all reports utilized the rubric to identify the number of papers that scored Above-Standard, Met Standard, or Below Standard. Collectively faculty submitted a representative sample of 211 student papers for this assessment (about 50% of the total enrollment).

The results of these reports are as follows:

- 59 students sampled scored Above-Standard (28%)
- 96 students sampled Met Standard (45.5%)
- 56 students sampled scored Below Standard (26.5%)

LESSONS LEARNED

Lesson One: Generally, 100w faculty who had a high percentage of students who met or scored above-standard explained in their reports that they led discussions wherein students engaged in comparisons between articles demonstrating pseudo-science and science. These high scores were the result of explicit instruction that asked students to “underline” or otherwise identify the scientific methodologies utilized in the article or sample articles during class. Faculty commented that “the term [pseudo-science] was not presented in the assignment prompt” and “the journal article assignment did not ask students to talk about the concept of pseudo-science in their discussion[...]. Instead[...]the assignment asked students to focus on analyzing the particular ways in which the article proves/disproves its hypothesis or demonstrates the validity of its design process. The purpose of the assignment [is] for students to gain understanding of the specific ways in which a journal article can establish its scientific validity.”

PART III. What modifications to the course are planned?

Proposed Action:

The faculty coordinator should discuss findings at a faculty meeting and address the issues raised by faculty (both veteran and newcomers) about the ambiguity of the assignment directions in relation to this SLO. Since the assignment is designed with the
objective of satisfying this particular SLO, faculty must agree on how to better incorporate the language "pseudo-science" into both the directions and the preparatory in-class activities in order to improve this outcome.

PART I: SLO #1 AREA Z ASSESSMENT SPRING 2015

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**Fall 2014 Exit Exam**

- Score of 8: 56%
- Score of 7: 20%
- Score of 9: 7%
- No Pass: 9%
- 10 and Higher: 8%

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**Spring 2015 Exit Exam**

- Score of 8: 40%
- Score of 9: 23%
- Score of 7: 19%
- No Pass: 6%
- 10 and higher: 12%

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PART II:

A comparison of the Exit Exam in fall 2014 and spring 2015 results for AREA Z SLO #1 shows the greatest improvement in the higher scoring categories while the lowest scoring categories showed insignificant change. The greatest increase in scores occurred in the "9" range where students' scores showed a 16 percentage point increase in spring 2015 over fall 2014. Significantly, more students scored a "9" and fewer scored an "8" on the Exit Exam in spring, which can be interpreted as an important improvement in student
outcomes.

PART III: No further modifications beyond those covered previously in this report.

Part 2 To be completed by the department chair (with input from course coordinator as appropriate):

(4) Are all sections of the course still aligned with the area Goals, Student Learning Outcomes (SLOs), Content, Support, and Assessment? If they are not, what actions are planned?

All sections continue to be standardized and therefore aligned.

(1) If this course is in a GE Area with a stated enrollment limit (Areas A1, A2, A3, C2, D1, R, S, V, & Z), please indicate how oral presentations will be evaluated with larger sections (Area A1), or how practice and revisions in writing will be addressed with larger sections, particularly how students are receiving thorough feedback on the writing which accounts for the minimum word count in this GE category (Areas A2, A3, C2, D1, R, S, V, & Z) and, for the writing intensive courses (A2, A3, and Z), documentation that the students are meeting the GE SLOs for writing.

The General Engineering Department retains copies of Exit Exams that were utilized in this assessment that demonstrate students’ abilities to meet GE SLOS. Additionally, 211 copies of student papers were collected for AREA R assessment. Instructors provide feedback on all major assignments and weekly reports. All sections utilize standardized directions with clearly specified word-count requirements and thus all sections meet the minimum word count requirements specified by the GE guidelines.