General Education Annual Course Assessment Form

Course Number/Title ___BIOL 55_________________  GE Area ___B4______________________________

Results reported for AY __2016-2017_____  # of sections ____2________  # of instructors ______1_____

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Department Chair: ___Jeff Honda___________  College: ___ _Science__________

Instructions: Each year, the department will prepare a brief (two page maximum) report that documents the assessment of the course during the year. This report will be electronically submitted to <curriculum@sjsu.edu>, by the department chair, to the Office of Undergraduate Studies, with an electronic copy to the home college by October 1 of the following academic year.

Part 1

To be completed by the course coordinator:

(1) What GELO(s) were assessed for the course during the AY?

**SLO1:** Use mathematical methods to solve quantitative problems, including those presented in verbal form; **SLO2:** Use mathematics to solve real life problems; **SLO3:** arrive at conclusions based on numerical and graphical data

In addition, students were required to produce written assessments of their statistical analyses from laboratory exercises, amounting to at least 500 words of written material.

(2) What were the results of the assessment of this course? What were the lessons learned from the assessment?

**SLO1:** Use of mathematical methods for quantitative problems was assessed using exam prompts that required students to read and interpret a set of raw data, perform the appropriate statistical test calculations by hand (calculating confidence intervals, predicting values based on regression). Of the 84 students in Fall 2016 & Spring 2017, 76.7% displayed mastery of the outcome at a high level, 16.1% displayed average proficiency, 3.7% showed marginal proficiency, and 5.3% were not proficient.

**SLO2:** Using mathematics to solve real life problems was assessed by exam questions requiring students to carry out contingency tests and goodness of fit tests, and interpret the results of the experiment described in the prompts. Of the 84 students, 70.6% mastered the outcome at a high level, 17.1% displayed average proficiency, 9.0% had marginal proficiency, and 3.8% did not display sufficient proficiency.

**SLO3:** Arriving at conclusions based on numerical and graphical data was assessed using a set of assessment questions given at the start of the semester and end of the semester. These questions required the students to deduce statistical quantities or trends from graphical values, and draw experimental conclusions from those values. Overall, an average of 84.4% of students displayed high proficiency at these tasks at the end of the course, 9.1% displayed average proficiency, and 6.6% had marginal proficiency. Compared to the initial percentages of students that displayed
mastery of the concepts at the start of the semester, the average increase in highly proficient students was 34% by the end of the semester.

**Writing:** For the writing assessment, we judged that an average of 53.5% of students were displaying mastery of written communication of their statistical analyses, 30.7% were average proficiency, and 15.8% had low proficiency, while no students lacked any level proficiency.

(3) What modifications to the course, or its assessment activities or schedule, are planned for the upcoming year? (If no modifications are planned, the course coordinator should indicate this.)

The results from the 2016-2017 academic year indicate that more effort can be put into improving students’ calculation and interpretation skills. The primary shortfall appears to be in correctly recalling and interpreting equation variables in order to carry out the calculations, so an increased number of example problems should be attempted to improve comfort with utilizing the core equations. Student writing needs to be improved as well. We can attempt to strengthen this through additional review of the key components of a properly written statistical result to reinforce the inclusion of all necessary values.

**Part 2**

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

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

Yes

(4) 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 GELOs for writing.

Presently, this issue not applicable to our courses in Biological Sciences. Of the above areas listed, we have courses in Area R, S, and Z. None of these courses have sections over the 40 maximum students as mandated by University policy and are receiving adequate feedback. Area R may require more student demand in the future, however, we envision adding more sections rather than making larger sections. Area Z is capped at 25 students: our syllabi should demonstrate that students are meeting GE SLOs for writing as assignments are clearly documented.