General Education Annual Course Assessment Form

Course Number/Title Biol 135B, 160, 178, Micr 127

GE Area _R______________________

Results reported for AY 2016-2017  # of sections _______________ # of instructors ________________

Course Coordinator: (see below)________________ E-mail: _________

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 SLO(s) were assessed for the course during the AY?

Biological Science majors satisfy the requirements for GE Area R through a combination of courses. All majors complete Biol 115: General Genetics, after which students complete the capstone course in their own discipline. During the 2017-18 AY, students were assessed for GELO 3 and the writing requirement in their capstone courses.

GELO 3: Students will be able to apply a scientific approach to answer questions about the earth and environment.

- Biol 135B: Eukaryotic Cell and Molecular Biology (BS Molecular Biology). Instructor: Dr. Julio Soto
- Biol 160: Ecology (BS Ecology and Evolution, BS Marine Biology, BA Biology) Instructor: Dr. Scott Shaffer
- Biol 178: Integrative Physiology (BS Systems Physiology) Instructors: Dr. Katie Wilkinson
- Micr 127: Microbial Physiology (BS Microbiology) Instructor: Dr. Sabine Rech

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

For all courses, students were considered to have mastered the learning objective when they achieved a score higher than 89%. An average performance was a score between 70-89%. Students who received a score below 70% failed the GELO.

Biol 135B: Eukaryotic Cell and Molecular Biology (BS Molecular Biology): In this course, students were asked to discuss environmental carcinogens on their third exam to evaluate GELO 3. Of the 19
students evaluated during Spring 2017, 18 (95%) mastered the concept, and 1 student (5 %) failed the evaluation.

**Biol 160: Ecology (BS Ecology and Evolution, BS Marine Biology, BA Biology):** Students conducted two writing assignments that fulfilled the both GELO 3 and the writing requirement. The first involved conducting field surveys to measure tree density of three oak species at Guadalupe Oak Grove. Two survey methods were used and students were required to write an essay to compare and contrast methods using the data they collected in the field. The second assignment used software (SimUText) to model corridors for the maintenance of a metapopulation of butterfly species. Based on the results of model simulations, students wrote a management plan for their recommendations to conserve this endangered species.

Of the 42 students in this course during Fall 2016, 27 (64%) mastered the GELO, 11 students (26%) had an average performance, while 4 students (10%) failed the GELO.

**Biol 178: Integrative Physiology (BS Systems Physiology):** In this course, students wrote a 10-page review paper to satisfy their writing requirement. Of the 21 students who took the course in Fall 2016, 3 students (14%) mastered this GELO, 15 students (72%) had an average performance, and 3 students failed (14%). For GELO 3, students read from the scientific literature to evaluate whether a claim made on a TV show is supported by evidence. For this assignment, 12 students (57%) mastered the concept, while 9 students (43%) had an average performance.

**Micr 127: Microbial Physiology (BS Microbiology):** In this course, students were asked to write a 2000-word review paper that included at least 20 recent primary research articles. Of the 33 students in the course, 2 students (6%) mastered the assignment, 29 students (88%) had an average performance, while 2 students (6%) failed the assignment because they did not complete the paper. For GELO 3, students were asked to design an experiment to answer either of the following questions: Are bacteria important in the degradation of toxic compounds? Or, What role to two component phosphorelay systems play in the production of virulence factors? The experiment had to be described in 500 words and follow the scientific method. For this GELO, 4 students mastered the concept (12%), 27 had an average performance (82%), and 2 students (6%) failed because they did not complete the assignment.

(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.)

Starting with AY 2017-18, the GELOs assessed in Biol 115 are also certified for assessment in Biol 118 and Micro 166, in recognition of requirements of all majors in the department.

**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 Objectives (SLOs), 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 SLOs 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.