General Education Annual Course Assessment Form

Course Number/Title ________ Geology 4L ________ GE Area ______________ B3 ______________

Results reported for AY 2017-2018 ______ # of sections ______ 12 ______ # of instructors ______ 7 ______

Course Coordinator: ____Jonathan Miller_________ E-mail: ____jonathan.miller@sjsu.edu________

Department Chair: ____Jonathan Miller__________ 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?

   GELO 1: Students should be able to use the methods of science and knowledge derived from current scientific inquiry in life or physical science to question existing explanations.

   GELO 2: Students should be able to demonstrate ways in which science influences and is influenced by complex societies, including political and moral issues.

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

   GELO 1: We evaluated GELO 1 using a set of complex global data sets (e.g. global distribution of volcanoes, earthquake epicenters, topography, absolute age of ocean floor) to formulate the basic precepts of plate tectonic theory. After carrying out the lab activity, students complete a post-lab assessment online via Canvas to evaluate whether they have achieved the GELO. Results from this assessment showed that out of all students (N=296), approximately 84% of students had scores of 75 or higher, which we consider sufficient to demonstrate achievement of GELO 1.

   GELO 2: We evaluated GELO 2 using questions answered via an online Canvas assessment following a weather and climate lab activity up. Students carry out a lab activity to understand the physics of the greenhouse effect, atmospheric composition (including concentration levels of greenhouse gases over time), and weather versus climate. The online assessment gauges their understanding of these concepts and fulfills the GELO by having them do an ecologic footprint analysis to evaluate their personal “carbon footprint”. They then answer questions and with moral/political dimensions (e.g. questions related to their food choices, shelter, transportation and comparisons to other groups globally) and comment on them based on this analysis. 92% of students among all sections completed this analysis and demonstrated achievement of the GELO.
b. What were the lessons learned from the assessment?

Although GELO 2 is evaluated using the carbon footprint exercise in the post-lab assessment, it is clear from discussions with TA instructors for 4L that moral and political issues surrounding climate change were covered unevenly during the labs. The lab activity mainly addresses the physics of climate and weather and it is then up to the individual instructors to facilitate discussion of the intersection of climate change with societal concerns and issues. However, the lab activity takes all/much of the lab period and so the chance for discussion prior to students doing the assessment is quite limited.

(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.)

Owing to modifications to shorten the plate tectonics lab activity (it is a fairly long and challenging lab), questions that pertain to Bay area faulting and the nature of the plate boundary in the Bay Area have been eliminated from the plate tectonics lab exercise. Although this lab satisfactorily achieves GELO 1, the questions that were eliminated pertain directly to GELO 2, and very pertinent to the day-to-day experiences, policies, and politics of the Bay Area. We are examining this lab and the overall lab schedule to see where we might reinstate some of this lab content and then develop appropriate follow-up assessments for students that will evaluate GELO 2. However, in the next assessment cycle, we will be assessing GELO 2 using a different lab activity and follow-up assessment that focuses on streams and flooding and California’s water.

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 (GELOs), Content, Support, and Assessment? If they are not, what actions are planned?

All sections of Geology 4L are still aligned with the GELO’s.

(5) 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.