General Education Annual Course Assessment Form

Course Number/Title  Geology 103  GE Area R

Results reported for AY  2017-2018  # of sections 2  # of instructors 2

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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 will be able to demonstrate an understanding of the methods and limits of scientific investigation.
GELO 2: Students will be able to distinguish science from pseudo-science.

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

Assessments for GELO 1:
Nearly every class included lab activities or demonstrations which engaged students in asking scientific questions and using evidence to address them. For example, one assignment allowed students to specialize in a particular line of evidence that supports Plate Tectonic Theory (e.g., earthquakes, volcanoes, surface topography), then share their knowledge with others, in turn, in a second group that represents students from each specialization. The purpose of this assignment was to learn how multidisciplinary lines of data can, through collaboration, result in a unifying theory. Limits of this investigation were noted as each specialized group had to tackle data sets that were limited in scope, and only through sharing of data could a more comprehensive theory be created.

An estimated ~ 85-90% of students enrolled in Geology 103 during the assessment period met this learning objective; most of those who did not were absent when the activities were completed in class.

Assessments for GELO 2:
One instructor gave a lecture about science, pseudoscience, and scientific methodology on the first day of class which was accompanied by an open class discussion, as well as an on-line quiz that tested students’ understanding. Students were given two attempts on the quiz, and the assessment revealed that every student understood the difference between science and pseudoscience after the second attempt. Over 80% were able to master the quiz on the first attempt.

The other instructor used a rubric to evaluate student responses to questions accompanying a guided
exploration of UC Berkeley’s “Understanding Science” web site (https://undsci.berkeley.edu/), which features an interactive flowchart designed to illustrate the process of science inquiry. Related questions were asked during in-class formative assessments and on exams. Based on their graded responses, an estimated 90% of students were able to explain how pseudoscience differs from science.

(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.)

One instructor reported that in the coming year he will introduce new class activities related to climate change based on his participation in an American Metrological Society Faculty Professional Development Workshop in August, 2018.

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 Geol 103 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.