**General Education Annual Course Assessment Form**

Course Number/Title _______Geology 111_ GE Area _______R____

Results reported for AY ____2017-18____ # of sections ___7___ # of instructors _____4____

Course Coordinator: ____Manny Gabet _______ E-mail: _______manny.gabet@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 2**: Students will be able to distinguish science from pseudo-science.

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

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

**GELO 2**

In the section on climate change, the students are introduced to the global carbon budget and shown the different sources and sinks of carbon dioxide. They were then asked to assess various statements regarding the causes of global warming. For example, they were asked whether CO2 emissions from volcanoes is greater than that from cars (a common claim made by pseudo-scientists). 100% of the students answered this question correctly.

As part of a discussion of earthquake prediction, the students were asked to write a short essay on how they might determine whether an earthquake prediction were scientifically valid or not. Approximately 83% of the students wrote about reasonable criteria (ex., the data which were the basis for the prediction, the scientific background of the person making the prediction, the opinions of other scientists about the prediction) while the remaining students couldn’t come up with an insightful way of distinguishing science from pseudo-science.

**GELO 3**

The students used an online plate tectonics model to run experiments simulating the different ways that different types of crust can interact with each other. They were asked to observe and record the various geological features that result from the different interactions. Their level of
understanding was assessed by answering questions. Based on the answers to the questions, about 80% of the class demonstrated competence.

In an exercise, students calculate from a topographic map and then compare the stream gradients and ground surface slopes in an eroding environment and an adjacent depositing environment (Alum Rock Canyon and the adjacent alluvial fan surface in east San Jose). They then draw conclusions about where one finds steeper and more gentle stream gradients. Of those students who can calculate the slopes correctly, virtually all draw the correct conclusions about the stream gradients. The 15% of students who have difficulty subtracting one number from another and then dividing one number by another are not able to draw the correct conclusion.

(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.)

GELO 2. Next year the particular example of a historic false earthquake prediction will be expanded to include more information (the presumed basis of the prediction, reaction of USGS scientists, profession of the person making the prediction) so that students have more of a context in which to evaluate what to look for in science vs. pseudo-science.

GELO 3. In the past, this exercise has been simplified by giving the students (rather than having them determine) the numbers to subtract and divide rather than having them determine those values from the topographic map and map scale. Next year, a sample problem/solution will be provided so that hopefully those having trouble with the math can better figure out what to do and then reach the correct conclusions. In addition, students will watch and evaluate a video that addresses GELO 3 and then answer questions based on the video.

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 111 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.