General Education Annual Course Assessment Form

Course Number/Title: METR 112/Global Climate Change   GE Area: R

Results reported for: AY 11-12   # of sections: ~12   # of instructors: ~7

Course Coordinator: Alison Bridger (as dept chair)   E-mail: Alison.Bridger@sjsu.edu

Department Chair: Alison Bridger   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,** by the department chair, to the Office of Undergraduate Studies, with an electronic copy to the home college by September 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?

SLO#1: "Students will be able to demonstrate an understanding of the methods and limitations of scientific investigation". Raw data is stored in the chair's office/assessment data shelf (COADS).

Note that SLO#1 was first assessed in Fall 2011 in an *ad hoc* manner, and has been re-assessed in Fall 2012 as part of a coordinated department plan.

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

In a department assessment retreat in January 2012, faculty discussed assessment at all levels, including in GE. Faculty decided to have an "assessment week" in which assessment activities would be conducted in *all* GE classes in one week (April 9-12, 2012). Faculty also developed a set of questions to assess the SLOs. We designed *one* question to address SLO#1 in *both* our advanced GE classes, MET 112 and MET 113.

In MET 112 & 113, the following question was posed: "How do we use proxy methods to determine temperatures over the past millions of years, and what are the shortcomings of these methods?" Faculty also discussed the elements that would be needed in a student's response in order to qualify as "meeting" the SLO.

Data was gathered in six sections of MET 112 and one section of MET 113, and in the two online sections of MET 112. Answers were graded in three categories: "meets expectations", "does not meet expectations", or "partial" (typically indicating that the student had an incomplete understanding, but was not clueless). In the seven regular sections (155 students), 94 met expectations (61%), 53 partially met expectations (34%), and only 8 did not meet expectations. More concisely, 95% of the students had at least some (correct) sense of the answer, whereas only 5% did not meet the learning outcome. If this was given as a take home exercise (which we believe

was the case), it is very possible that the statistics are skewed towards students who could meet the SLO.

The vast majority of students (147 of 155) *did* meet the learning outcome, at least partially. There was an interesting variation section-to-section in the percent of students who fully met the SLO. This ranged from a high of 89% in one section, to a low of 38% in another. But the instructor with the "38%" had a ranking of 85% in a second section, so there is no obvious conclusion to be drawn. One further finding was that the responses in the online sections were generally less well-written and were also shorter (typically 2-4 sentences, compared to 1-2 paragraphs). This reviewer had to stop reading these due to impending brain damage, and thus these statistics are not included here. However, the faculty will consider this variance as we look at all our assessment data this fall.

In summary, we believe that our teaching in all sections of this course (probably including the online sections) is being successful in teaching students about "an understanding of the methods and limits of scientific investigation".

(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 faculty will discuss the results above in an assessment meeting this fall, and will seek ways to improve our overall performance relative to this SLO and across all sections and instructors. We will pay attention to differences between student learning in online versus non-online sections of the course.

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?

The chair is satisfied that this course is being delivered with full and appropriate attention to all area "R" goals, SLOs, content, support, and assessment.