**General Education Annual Course Assessment Form**

Course Number/Title  Phil 160/Philosophy of Science  
GE Area  R  

Results reported for AY  2017/2018  
# of sections  2  
# of instructors  4  

Course Coordinator: Janet D. Stemwedel  
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Department Chair: Janet D. Stemwedel  
College: Humanities & the Arts  

**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. We assessed GELO 1: **Students will be able to demonstrate an understanding of the methods and limits of scientific investigation.**

2. In all sections of the course, we used essay assignments to assess students’ mastery of this learning outcome. One essay asked students to explain the significance of the problem of induction for naïve inductivist accounts of science, and then to critically analyze attempts at solving this problem with respect to the work of Carl Hempel on confirmation and Karl Popper on falsification. The students were required to assess how well some theories fared given Hempel’s approach or Popper’s. In another essay, students described the peer-review process, assessed the ways its application can *undermine* objective knowledge-building, and applied the work of Helen Longino to explain how (and under what conditions) peer-review can *increase* objectivity. One section took up the nature of replication as a questions that was revisited throughout the semester; students were asked to evaluate particular scientific claims in various research domains to assess how important replication was to the research domains counting as properly scientific. These assignments allowed students to demonstrate familiarity with the notion that there are limits not only to the logical justification of knowledge claims (or what counts as epistemic “progress”), but that these limits also extend into other epistemic domains, including science.

   We also used embedded questions on exams to check students’ mastery of this learning outcome.

   The vast majority of students demonstrated mastery (ranging from adequate to excellent) of this student learning outcome. The students that struggled with it seem to have been thrown by the fact that we were examining differing theoretical accounts of scientific methodology.

3. We feel that our current course design and methods of assessment are working for us, and plan no modifications at this time.
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?

Yes — Janet D. Stemwedel, Department Chair

(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.

The instructor of record provides feedback and grades all writing assignments and welcomes, if not requires, first drafts of all writing assignments and provides feedback on drafts. If sections are exceptionally oversized they are graded by the instructor of record with the assistance of an Instructional Student Assistant (ISA). The ISA must be approved both by the Instructional Assistant Coordinator and the Philosophy Department Chair for their excellence in both composition and their expertise in the field of philosophy at issue. Whenever an ISA aids in the grading of a large course, s/he provides feedback along with grading. In all cases, when the help of an ISA is employed, the instructor of record must explicitly notify the students of the class that some writing assignments have been graded and feedback has been provided by an ISA. If a student is unhappy with an ISA grade the instructor of record will reread the paper, provide additional feedback, and regrade the assignment (if that is warranted.) Generally speaking, any instructor who is teaching more than 100 GE students in a semester receives ISA help.

Sample exam questions:

Given Popper’s account of science, what kind of progress can science make? What kind of progress can we not count on from science?

Given Kuhn’s account of science, what kind of progress can science make? What kind of progress can we not count on from science?

Following a successful test of an atomic bomb, what would each of the following say about the theory of the atom: An instrumentalist? A constructive empiricist? A realist?

Show how the Hypothetico-Deductive model of theory confirmation works on a theory like Darwin’s theory of evolution. (make sure to show the structure of the HD model)

What is the “symmetry principle” in the Sociology of Science and why is it thought to imply a relativist position?
Explain how the Scientific Revolution not only changed ideas about the solar system, but also changed methods and standards of truth claims. Mention at least two characters of the scientific revolution in your answer and what their contributions were to this change.

What is the covering law model of explanation in natural science, and how would it be applied in order to explain the death of a potted plant in a dark room? [be specific in showing how the model works by showing the structure of the model]

Explain the difference between the top-down approach to explanation in the social sciences and the bottom-up approach. Give a brief example of each.