**To:** Natural and Mathematics Sciences Panel

**From:** Department of Anthropology

**Subject:** ANT 3211 as a Natural Science (Biological Science) GE course

**Date:** May 7th, 2014

The Department of Anthropology maintains ANTH 3211 meets the rationale for a Natural Science (Biological Science) GE course as outlined in the 2013-2014 ASC Curriculum and Assessment Operations Manual. Below we provide responses to concerns raised by the panel and will offer additional information when we meet with the panel in person on May 12th, 2014.

**Panel comments contained in Bernadette Vankeerbergen’s email dated April 24, 2014.**

**Comment 1:** *The proposal does not address two main aspects of Biology:*

*(a) How organisms interact with each other (i.e, interconnectedness among living things). The proposed course also does not talk about the emergent properties of biological systems.*

*(b) The proposal does not address energetics.*

**Anthropology Response:** We will be glad to address this issue in our meeting with the panel.

**Comment 2:** *Some of the topics identified in the proposal as biology are actually not biology.*

**Anthropology Response:** We will be glad to address this issue in our meeting with the panel.

**Comment 3:** P. 6 of document labeled “Ant 3211-Natural Science GE Anthropology Proposal” (GE rationale): Answers to question 4 (How do the written assignments address the GE expected learning outcomes?): Panel response: Quizzes 1, 3, and 4 are in actuality not related to the GE expected learning outcomes. (Quiz 3 deals more with chemistry than biology.)

**Anthropology Response:** We will be glad to address this issue in our meeting with the panel.

**Comment 4:** *Many of the guest lecturers do not have an academic background.*

**Anthropology Response:** We will be glad to address this issue in our meeting with the panel.

**Comment 5:** *Suggestion that the Dept look at one of the following excellent GE Natural Science—Biological Science courses: Anthropology 2200, Biology 1101, or Molecular Genetics 1101.*

**Anthropology Response:** We will be glad to address this issue in our meeting with the panel.

**Comment 6:** *GE assessment plan does not address the GE expected learning outcomes. It is a course assessment plan.*

**Anthropology Response:** The Dept. of Anthropology will administer a pre- and post- course survey constructed around the four learning outcome tenants for Natural Science (Biological Science) GE course as outlined in the 2013-2014 ASC Curriculum and Assessment Operations Manual. The survey will consist of 24 questions, six of which deal with each of the four GE learning outcomes. Results of the post course survey – delivered anonymously and not considered part of student course evaluation – will be compared with those administered to students on the first day of class in order to determine whether the goals of the GE are being achieved. Results from these surveys will be scrutinized following every semester and course adjustments (e.g., students do not understand the hypothetico-deductive process, do not gain adequate appreciation of the role of the science in informing public policy, etc.) will be made accordingly. Data will be archived with (1) the Forensic Science Advisor, (2) Department Chair, and (3) Undergraduate Advisor.

Examples:

1. Students understand the basic facts, principles, theories and methods of modern science.
   1. Questions concerning hypothesis construction, inductive and deductive reasoning, which scientific tests would be best to use on the various evidence types found during forensic enquiry, and why they are the best.
2. Students understand key events in the development of science and recognize that science is an evolving body of knowledge.
   1. Questions concerning the history of, and changes to, various scientific disciplines as they pertain to expert testimony in a court of law, e.g. Daubert Standards.
3. Students describe the inter-dependence of scientific and technological developments.
   1. Questions concerning the applicability of various scientific disciplines to forensic inquiry, the scientific accuracy of certain tests and how that relates to the rules of evidence and expertise.
4. Students recognize social and philosophical implications of scientific discoveries and understand the potential of science and technology to address problems of the contemporary world.
   1. Questions concerning how to apply the knowledge in the class to hypothetical case studies, and how experts (forensic scientists) must meet new Daubert and Kuhmo standards.