**General Education Annual Course Assessment Form**

Course Number/Title: Geol 07, Earth, Time, and Life  
GE Area: B1 and B3

Results reported for AY 2013-14  
# of sections: 4 (11 lab sects)  
# of instructors: 3

Course Coordinator: Robert Miller (Jonathan Hendricks on sabbatical)  
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Department Chair: Robert 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, 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 2: Students should be able to demonstrate ways in which science influences and is influenced by complex societies, including political and moral issues.

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

As reported in the 2010-2011 GE assessment, we maintained our focus on demonstrating the notion: the present is the key to the past. One of the many concepts taught in this class during 2013-2014 is that geological processes are largely slow and progressive, yet punctuated by catastrophic events large enough to profoundly change the biological and evolutionary landscape. The past, in this case, is even today a very contentious subject. Ubiquitous dogmatic notions, such as a 6,000-year-old Earth and the denial of evolution by a significant portion of this country, is a critical issue facing science and society today. In this class, instructors present observations and data, utilizing the scientific method, which are consistent indicators of a deep and protracted geological and evolutionary history. In short, the interplay of science and society is one of the primary foci of this class, and is addressed in multiple ways.

Students learn about climate change and how it influences, and is influenced by, complex societies. More specifically, students explore ice core data and other geological, oceanographic, and paleontological proxies that help us determine the climate patterns of the past. By focusing much attention on the interplay between climate change and the resultant environmental stressors, students can think more critically about how climate has influenced evolution, but also what lies ahead for humanity. From this, they can make better decisions concerning their personal role in mitigating these effects as much as possible.

Assessment came in many forms. Students were given the task of analyzing geological cross-sections for evidence of whether the strata indicate a rising or falling sea level. This, along with the knowledge of depositional settings for particular sedimentary rock types gained during the course, was used to help decipher climate patterns of the past. Assessment was conducted through a series of multiple-choice questions on the two
mid-term exams. On the basis of the answers, the percentage of students deemed successful in demonstrating understanding of the learning objective was about 75% during 2010-2011, whereas 2013-2014 saw an increase to 83%. The addition of new sets of slides and visual aids is inferred to have helped increase the percentage of students with correct answers concerning these topics on mid-term exams. In addition, an essay addressed SLO #2 in a more direct way. The term paper consisted of two prompts, and students were required to answer both: The first was to describe one of the lines of evidence that supports evolutionary theory. The second prompt more directly addressed SLO #2, as it asked students to analyze a recent PEW research poll that showed that progressively more Republicans are denying evolution, while the percentage of Democrats denying evolution has remained more or less stable, and much lower, than that of Republicans. Students were asked to explain these data. Roughly 87% of students scored a C or better on their essay; the 13% that did not score high enough also includes students who failed to hand in any essay at all.

(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 updates to the class (both lecture and lab) brought forth by the regular course coordinator, Dr. Jonathan Hendricks (on sabbatical in Fall 2014), and several lab instructors under his supervision were very successful over the past three years. A different instructor, Joe Petsche, took over the lecture portion of Geology 7 in Spring 2014 and Fall 2014. Petsche has taught the laboratory component of Geology 7 in the past, and he has recently authored a college-level textbook entitled *Prehistoric Life*. The research involved in authoring this book has helped to improve the curriculum with new and updated knowledge. In addition, a new library of figures and specimens from Petsche’s personal collection has given Geology 7 additional resources for students. Petsche will continue to teach the course and we foresee no major modifications.

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?

All sections are still aligned with Area B1 and B3 goals and student learning objectives. No action is planned.