

Campus Assessment of Student Learning Outcomes

Unit Name: Geosciences Assessment Summary Fall 2010-Spring 2011

What are the student learning outcomes in your unit?

General Education quantitative (mathematical) skills

Scientific Reasoning

Which outcome did you assess this academic year?

Scientific Reasoning – We are specifically interested in understanding the effectiveness of our introductory laboratories (G102) in student learning. Dr. Huysken has facilitated a study to assess scientific reasoning since 2008.

How did you assess their skills before, during and/or at the end of the semester/ academic year?

Approximately 40% of our introductory Earth science students enroll simultaneously in both the Introduction to Earth Science lecture course (G101) and the associated laboratory course (G102). This facilitates comparisons between the lecture-only group, and the lecture + lab group. We used two separate measures to assess student learning between the two groups.

We compared class performance (i.e. final grades) of all introductory lecture-only and all introductory lecture + lab students enrolled during the 2010-2011 academic year. This measure includes, but is not limited to, assessing students' reasoning skills.

Secondly, we applied previously developed pre- and post-tests designed to evaluate application of scientific concepts covered in the introductory earth science course (i.e. students were required to reason scientifically). The test was given to one introductory lecture class at the beginning and again at the end of the semester. Pre- and post-test performance of students from the lecture-only group, were compared to those from the lecture + lab group.

Please summarize the data you have collected this semester/academic year.

The assessment finds that laboratory enrolment dramatically impacts the pass/fail rate of students in lecture. The fail rate is lower for students that are concurrently registered in the lecture + lab (3.4%) compared to those enrolled in lecture only (10.5%). Students enrolled in the lecture + lab

generally perform better in the lecture portion of the course. Data indicated that non-traditional students benefit the most from the lecture + lab enrollment.

Please describe any programmatic changes you have made or are planning to make based on the data you have collected.

Our results continue to indicate that students benefit significantly from taking the introductory laboratory along with the introductory Earth Science lecture course. In Fall 2011 the Department of Geosciences increased the number of sections of G102 offered in response to the 2010-2011 data. The Department of Geosciences currently discussing the feasibility of requiring all Earth Science students to enroll in the laboratory given constraints on space and staffing.

****Note:** Please use this template to provide the responses to the prompts above.**