

**DEPARTMENT OF GEOSCIENCES ASSESSMENT PLAN
FOR MIDDLE STATES EVALUATION**

FALL 2011

1. Goals for student learning for AY 2011 – 2012:

- a. Geosciences majors enrolled in the Seminar in Geosciences (GEO 459) will be proficient in content knowledge, reasoning skills, problem solving, and the ability to clearly communicate results.
- b. Geosciences majors enrolled in Structural Geology (GEO 370) will be proficient in field studies, including the ability to collect, analyze and interpret geologic data scientifically, depict geological observations on maps, construct valid interpretations of observations, and report observations and interpretations succinctly.
- c. Earth Science Adolescence Education in the second semester of their junior year will be proficient in content knowledge, reasoning skills, and problem solving and be able to clearly communicate that proficiency.

2. Descriptions of methods:

- a. The Seminar in Geosciences (GEO 459) is required of all majors and typically taken during the senior year. Students make a series of presentations based on their research of various topics that require an application of the knowledge they have accumulated through the courses required for their major. Their final presentation is made to the entire faculty, their peers and other interested individuals. Each person in the audience completes an evaluation form, which assesses the student's presentation in terms of content, the associated written abstract, organization, level of geological knowledge, poise and self confidence, visual aids, and the ability to answer questions.
- b. Structural Geology (GEO 370), an intensive writing course, will be offered in the Spring 2012 semester and is typically taken by students in their junior year. This course requires a laboratory experience much of which occurs in the field. This field experience includes the collection, analysis and interpretation of geologic data. Students are required to focus on some aspect of fracturing as it relates to hydrocarbon exploration. They are expected to interpret data from maps, construct valid interpretations of the data, and report their findings at the end of the semester in the form of a term paper. The course instructor evaluates the term paper in terms of the student's ability to communicate the collection, analysis and interpretation of their data. In particular, the instructor is looking for evidence that the student was able to place her or his work in the larger context of geological structures, including the kinematics and dynamics of folding and faulting, stress, strain, deformation and rheology.
- c. The Earth Science Adolescence Education majors who are in the second semester of their junior year will be screened to determine whether their content knowledge is sufficient to begin student teaching. Each student will meet with the faculty as a group and answer questions of a general geological nature as posed by the faculty over a period of thirty (30) minutes. In addition to recording whether the students answer the questions correctly or incorrectly, the faculty will be observing how well the students are able to apply what they know and communicate that knowledge.

3. Time line:

- a. This academic year, GEO 459 is offered in both the Fall 2011 and Spring 2012 semesters. The evaluation of the students' presentations will occur in early December 2011 and late April to early May 2012.

- b. This academic year, GEO 370 is offered in the Spring 2012 semester. The evaluation of the students' presentations will occur in late April to early May 2012.
- c. The screening of Earth Science Adolescence Education majors who are in the second semester of their junior year will occur in late March 2012.

The results of these three (3) assessment efforts will be compiled for inclusion in the department's annual assessment report to the Dean of Arts and Sciences in June 2012.

4. Assignment of responsibility:
 - a. The instructor teaching GEO 459 in both the Fall 2011 and Spring 2012 semesters is Dr. Gary Lash. Dr. Lash will evaluate the students' presentations and collect, compile and summarize the evaluation forms completed by the other students in the class and the faculty in attendance.
 - b. The instructor teaching GEO 370 in the Spring 2012 semester is Dr. Gary Lash. Dr. Lash will evaluate the Geosciences students' term papers and relay the results to Dr. Ann Deakin.
 - c. Department Chair, Dr. Gordon Baird, will convene the screening sessions with the Earth Science Adolescence Education majors who are in the second semester of their junior year. In consultation with the attending faculty, Dr. Baird will summarize the results of the screening process and document them in the form of a letter to the Dean of the College of Education and the Director of Field Experiences in the College of Education.
5. Record keeping: Dr. Deakin is responsible for collecting and compiling the results of the assessment efforts for GEO 459 and GEO 370. Dr. Baird is responsible for documenting the results of the Earth Science Adolescence Screening sessions and communicating them to the College of Education. Dr. Baird will also provide a copy of these results to Dr. Deakin. She will compile the results from all three (3) assessment efforts for the department chair's report to the Dean of Arts & Sciences. The results will be stored with the departmental files in Houghton 121.
6. Processes for using assessment results to improve learning: Assessment results are routinely discussed at weekly department meetings. It is anticipated that the results of the AY 2011 – 2012 assessment results will be disseminated by e-mail in June 2012 for discussion at the first department meeting in August 2012. This discussion has, in the past, encouraged open reflection on what can be done in our individual courses and advising sessions to improve student performance on the assessment instruments. The faculty has been proactive in addressing areas of student weakness through additions to and reinforcement of course content. The discussion will also afford the opportunity to determine whether the current assessment efforts are appropriate.

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