

UNIVERSITY ASSESSMENT COMMITTEE
Feedback to Academic Departments on Assessment Activities Reported in 2013-14

UNDERGRADUATE PROGRAMS

DEPARTMENT Geology & Geological Engineering **DATE** 2/5/15

PROGRAM(S) COVERED IN REVIEW B.S. in Geology

COMMITTEE MEMBER(S) CONDUCTING REVIEW Mary K. Askim-Lovseth and Surojit Gupta

1. STUDENT LEARNING GOALS

- | | | | |
|---------------------------------------|--------------|----------------|---------------------------|
| • Were any goals referenced? | YES <u>X</u> | NO <u> </u> | QUALIFIED Y/N <u> </u> |
| • If so, were goals well articulated? | YES <u>X</u> | NO <u> </u> | QUALIFIED Y/N <u> </u> |
| • Do goals address student learning? | YES <u>X</u> | NO <u> </u> | QUALIFIED Y/N <u> </u> |

Comments:

There are four student learning goals for the B.S. in Geology program, each written to focus on student learning. Two of the goals for the program were revised since the last review to be more explicit regarding the expected learning outcomes, a recommendation of the last review in 2012.

The Assessment Plan that was posted indicated an ending date of 2014. The Department is reminded to post an updated plan.

Undergraduate students in Geology can pursue secondary teacher certification with meeting the Secondary Education requirements in the Department of Teaching and Learning.

In addition to the program goals, please also consider UND's institutional and Essential Studies goals for student learning (shown in alignment within parentheses) and identify which goals are similar to program goals.

- X 1 Communication – written or oral (“able to write and speak in various settings with a sense of purpose/audience”)
 X 2 Thinking and reasoning – critical thinking (or “be intellectually curious”; analyze, synthesize, evaluate)
 X 3 Thinking and reasoning – creative thinking (or “be intellectually creative”; explore, discover, engage)
 X 4 Thinking and reasoning – quantitative reasoning (“apply empirical data...analyze graphical information”)
 X 5 Information literacy (“be able to access and evaluate...for effective, efficient, and ethical use”)
 6 Diversity (“demonstrate understanding of diversity and use that understanding...”)
 7 Lifelong learning (“commit themselves to lifelong learning”)
 8 Service/citizenship (“share responsibility both for their communities and for the world”)

Comments regarding program goals and alignment with institutional and Essential Studies goals:

Student learning goals (SLG) indicate that students will “evaluate and interpret” (SLG 1), “demonstrate retention and synthesis” (SLG 2), and “effectively communicate” (SLG 4). Though SLG 4 focuses on communication of the research project's results, the rubric used represents the research process—problem, central question, hypotheses, procedures, data, etc. None of the criteria relate to written or oral communication competencies.

Creative thinking, quantitative reasoning, and information literacy are implied as students must “effectively conduct geologic research.”

2. ASSESSMENT METHODS

Were any specific assessment methods referenced?	YES__X__	NO____	QUALIFIED Y/N ____
• If so, were specifically chosen assessment methods appropriately aligned with individual goals?	YES__X__	NO____	QUALIFIED Y/N ____
• Were both direct and indirect assessment methods used as components of a “multiple measures” approach?	YES__X__	NO____	QUALIFIED Y/N ____

Comments:

Several assessment methods were noted, both direct and indirect. These included research proposal presentations, research presentations, capstone exam, grades, GPAs, and exit interviews for graduates.

The Assessment Plan provided two rubrics for the senior thesis proposal and the senior thesis presentation. Each rubric had five levels with three descriptors noted—excellent, average, and poor. The senior capstone examination is short answer or essay and students must score above 75% when they take it at the beginning of the program’s capstone course. Any exams portions that fall below this, the student retakes the last week of the course. The exit interview is represented by four open-ended questions—overall satisfaction, recommending the program to others, changes in curriculum, any problem areas, and other.

Course grades are generally not considered a good assessment measure as a grade can encompass many elements of a course that may not be directly linked to a student learning goal. In addition, since a grade represents an aggregate of a student’s course performance, it is difficult to parcel out specifics related to understanding of the content. The use of an exam that represents certain content areas, coupled with item analysis, would be a better indicator. Other artifacts could include specific assignments aligned with content competencies. The value of using a student’s GPA to represent knowledge gained can also be questioned for the same reasons. The Department seems to recognize this as noted in the Annual Report regarding student grades and GPA, “Taken collectively, it appears our majors may learn the course material well from our program, its faculty and facilities. Not all students do so, because of who can say with assurance?”

3. ASSESSMENT RESULTS

Were any assessment results reported?	YES__X__	NO____	QUALIFIED Y/N ____
• If so, were the results clear in terms of how they specifically affirm achievement of goals?	YES____	NO__X__	QUALIFIED Y/N ____
• If so, were the results clear in terms of how they indicate need for improvement?	YES____	NO____	QUALIFIED Y/N __X__
• Were the results tied to goals for student learning?	YES____	NO____	QUALIFIED Y/N __X__

Comments:

In reporting the assessment data, the Department further validates the ineffectiveness of the use of grades and GPAs to assess student learning. “There appears no clear correlation between student’s research GPA and their program GPA. Some students with high program GPA’s did average to poorly in research and some with lower GPAs did average to fairly well in research.” The same held true with the capstone examination, “There seems no true correlation between a student’s program GPA and their initial performance on the capstone exam.”

Though there would be data from the use of the rubrics, subjective comments were made regarding the research proposal and final presentation. These comments did relate to some of the competencies identified in the rubrics.

Regarding the capstone examination, it was reported that no one passed the exam the first time (75% benchmark). After reviewing during the semester, “Nearly all student perform well above 75% on their retake.” It is unclear, since no comments referenced this, what were the specific deficient content areas that needed to be addressed. Later, the report did indicate that faculty needed to be provided the results of the exam for their respective courses.

Only four exit interviews were completed from 2012-14. Comments related to adding a “prep for field camp” (Department has a field methods course) and the use of more software in the classes.

In addition to program goals, some assessment results may be applicable to institutional and Essential Studies goals. Indicate any goals for which the program presents findings, and, for indicated items, describe findings below.

- ☐ 1 Communication – written or oral (“able to write and speak in various settings with a sense of purpose/audience”)
- ☐ 2 Thinking and reasoning – critical thinking (or “be intellectually curious”; analyze, synthesize, evaluate)
- ☐ 3 Thinking and reasoning – creative thinking (or “be intellectually creative”; explore, discover, engage)
- ☐ 4 Thinking and reasoning – quantitative reasoning (“apply empirical data...analyze graphical information”)
- ☐ 5 Information literacy (“be able to access and evaluate...for effective, efficient, and ethical use”)
- ☐ 6 Diversity (“demonstrate understanding of diversity and use that understanding...”)
- ☐ 7 Lifelong learning (“commit themselves to lifelong learning”)
- ☐ 8 Service/citizenship (“share responsibility both for their communities and for the world”)

Comments regarding results and the application of results to program, institutional, and Essential Studies goals:

No specific data were provided that would align with the institutional and Essential Studies goal.

4. CLOSING THE LOOP

Were any actions taken on the basis of assessment results reported?

YES _____ NO _____ QUALIFIED Y/N X

- If so, do curricular or other improvements/changes arising from assessment results directly address goals for student learning?

YES _____ NO X QUALIFIED Y/N _____

Comments:

Several actions to pursue were noted and most related to faculty involvement and procedures—all GEOL 101 faculty covering the same baseline content in the sections, faculty participation in student research presentations, providing faculty with results of the capstone exam, faculty being diligent in having students do the research proposal presentations (course requirement for GEOL 487), standardized advisement checklist, exit interview procedures, and when GEOL 256 is taken in the program..

The other point for discussion was should a senior thesis be required for all students since performance generally fell below expectations. Is it an appropriate learning experience for students who also may go into industry or consulting rather than pursue graduate school?

SUMMARY

Strengths

- ☐ A specific plan for assessment is in place.
- ☐ Student learning goals are well-articulated.
- ☐ Assessment methods are clearly described.
- ☐ Assessment methods are appropriately selected.
- ☐ Assessment methods are well-implemented.
- ☐ Direct and indirect methods are implemented.
- ☐ Results are reported.
- ☐ Results are tied to closing the loop.
(Decision-making is tied to evidence.)

Areas for Improvement

- ☐ No specific plan for assessment is in place.
- ☐ Student learning goals are not well-articulated.
- ☐ Assessment methods are not clearly described.
- ☒ Assessment methods are not appropriately selected.
- ☒ Assessment methods are not well-implemented.
- ☐ A single type of assessment methods predominates.
- ☐ No results are reported.
- ☒ Results are not clearly tied to closing the loop.
(Decision-making is not directly tied to evidence.)

OVERALL SUMMARY AND RECOMMENDATIONS:

The Geology Department recognizes that improvements can be made in the assessment process and acknowledges the need for faculty collaboration and commitment. Some suggestions would be to determine what the communication goal (SLG 4) represents (communication skills or research process), reconsider the use of grades and GPAs as assessment measures, and use student assessment data for decisions on closing the loop. For example, the rubric data collected on the presentations (after getting faculty to participate) would provide meaningful information for determining how that competency can be enhanced.

MATERIALS REVIEWED

☒ Annual assessment report
☐ Annual Report
☒ Assessment plan (as posted)
☒ Previous assessment review
☐ Other (please describe)

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Section 1: Y Section 2: Q Section 3: Q Section 4: Q

Coding Key:

- Y = yes, this is done appropriately and well (bearing in mind the kind of program(s) reviewed and recognizing that assessment is a cyclical process, i.e., with additional kinds of data to be collected and analyzed in other years)
- Q = qualified yes as action or progress is apparent; however, evidence is lacking that this is completely and appropriately done
- N = no, it is unclear whether it was done at all, or it is not done in relationship to student learning

Revised Sept 24, 2014