Academic Affairs
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REPORT ON AY2022-2023 ACADEMIC ASSESSMENT

Submission date: 11/10/2023

Assessment Plan covered in the report: Geological Sciences BS

College: College of Arts and Sciences

Campuses where the program(s) is delivered: ☒Anchorage ☐KOD ☐KPC ☐MSC ☐PWSC

Submitted by: Eric Klein, Assistant Professor, Department of Geological Sciences, esklein@alaska.edu

After responding to the questions below, the program should email this form to the dean, with a copy to the appropriate community campus director(s) if the program is delivered on a community campus.

1. **Please list and number the Program Student Learning Outcomes your program assessed in AY23. For each outcome, indicate one of the following: Exceeded faculty expectations, Met faculty expectations, or Did not meet faculty expectations.**

   Example: 1. Communicate effectively in a variety of contexts and formats – Exceeded faculty expectations.

   1. Identify and describe lithologies and formations in a field setting: N/A
   2. Construct geologic maps, surficial maps, and geological sections: N/A
   3. Use appropriate equipment and techniques as required by professional geologists: N/A
   4. Demonstrate critical thinking skills through synthesis of geologic information: Met faculty expectations
   5. Critically evaluate their own and others work for accuracy, fairness, clarity and scientific style: Exceeded faculty expectations
   6. Produce professional quality reports using their own and other's data: Met faculty expectations

2. **Describe your assessment process in AY23 for these Program Student Learning Outcomes, including the collection of data, analysis of data, and faculty (and other, e.g., advisory board) conversations around the findings. *(1000 words or less)***

   The department evaluates SLOs through the assignment of a cumulative letter grade based on assessment of student performance in three key courses, as per the Geological Sciences Educational

Effectiveness Assessment Plan adopted in October 2008 (accounting for modified course numbers).

- GEOL A310 Pro. Practices in Geology (early requirement in degree program) - Spring 2023
- GEOL A480 Geol. Field Methods (senior level required course) - Not offered in AY 22-23.
- GEOL A482 Geol. Field Investigations (capstone field mapping course) - Not offered in AY 22-23.

Due to reduced Department faculty we were not able to offer GEOL A480 or A482 in AY 22-23. Guidance in the previous year suggested that as the Department moves to a rotation of upper division courses to design assessment practices around this course rotation. We agree and are working on a new assessment rubric that is more logically aligned with the newer course rotations while still preserving the most important assessment aspects. However, this redesigned assessment plan is still being developed due to reduced faculty numbers, which have created barriers to consistent course scheduling and assessment redesign.

3. What are the findings and what do they tell the faculty about student learning in your program? *(1000 words or less)*

The SLOs and outcomes (letter grades) for AY 2022-2023 that could be assessed are as follows:

iv. Demonstrate critical thinking skills through synthesis of geologic information: B+

v. Critically evaluate their own and others work for accuracy, fairness, clarity

and scientific style: A-

vi. Produce professional quality reports using their own and other's data: B

These results are similar to AY 2021-2022.

4. Based on the findings, did the faculty make any recommendations for changes to improve student achievement of the Program Student Learning Outcomes? No

i. Please describe the recommended action(s), what improvements in student learning the program hopes to see, the proposed timeline, and how the program will know if the change(s) has worked. If no recommendations for changes were made, please explain that decision. *(1000 words or less)*

The faculty haven't made any explicit recommendations based on the AY 22-23 results. We continue to experience challenges in areas of our required BS GEOL curriculum and do not feel it is beneficial to make changes now. Additionally, the assessment data collected in AY 21-22 didn't indicate any major deficiencies in program learning outcomes requiring immediate attention. We are also continuing to offer many courses with an online option and some without required textbooks (e.g., 115, 310) , which helps more students to participate and helps close equity gaps.

5. **In the past academic year, how did your program use the results of previous assessment cycles to make changes intended to improve student achievement of the Program Student Learning Outcomes? Please check all that apply.**

☐Course curriculum changes
☐Course prerequisite changes
☒Changes in teaching methods
☐Changes in advising
☐Degree requirement changes
☐Degree course sequencing
☐Course enrollment changes (e.g., course capacity, grading structure [pass/fail, A-F])
☐Changes in program policies/procedures
☐Changes to Program Student Learning Outcomes (PSLOs)
☐College-wide initiatives (e.g., High-Impact Practices)
☐Faculty, staff, student development
☒Other
☐No changes were implemented in AY23. *(If no options above were selected)*

If you checked "Other" above, please describe. *(100 words or less)*
Two years ago, we made some teaching method changes to 100 & 200-level courses: increasing content related to structural geology, geologic cross-sections & stratigraphy, and sedimentary rock forms. After two years, it appears that these changes have helped provide students with more information that might help in upper division classes, but future years will help to assess this. Last year, we also changed course names to make courses more appealing to students: Environmental Geology was changed to Dangerous Earth and Physical Geology was changed to Planet Earth. Although it has only been one year, this seems to have helped enrollments and student interest.

6. **Do you have any information about how well these or other past improvements are working? Are they achieving their intended goals? Please include any data or assessment results that help you demonstrate this. *(1000 words or less)***

Two years ago, we made some teaching method changes to 100 & 200-level courses: increasing content related to structural geology, geologic cross-sections & stratigraphy, and sedimentary rock forms. After two years, it appears that these changes have helped provide students with more information that is helping in upper division classes. For example, students are now entering upper division classes like Sedimentology and Stratigraphy with more pertinent background knowledge. Future years will provide more insight as to how well this is working. Additionally, last year we also changed course names to make courses more appealing to students: Environmental Geology was changed to Dangerous Earth and Physical Geology was changed to Planet Earth. Although it has only been one year, this seems to have helped enrollments and student interest. We are also working to maintain a strong program in the future by addressing the issue of reduced enrollment through active and targeted recruitment (e.g., giving geology presentations to students at

Anchorage high schools and at UAA events for high school students, participation in UAA STEM Day) and retention (e.g., highlighting fun geoscience field opportunities in lower division courses) efforts.

DEAN SECTION (Due to the program on January 15)

After completing the Dean Section and signing it, the dean should email this form to the program, and copy uaa_oaa@alaska.edu for posting. If the program is delivered on one or more community campus, the dean should consult with the appropriate community campus director(s) on the response and copy the appropriate community campus director(s) when emailing the response to the program.

1. **Based on the program's responses above, what guidance and support do you have for the program moving forward? *(200 words or less)***

   The program is encouraged to modify its assessment strategies in order to match course rotation plans. Additionally, assessment of PLOs in lower division courses in addition to upper division courses may be fruitful as it allows to make formative as well as summative assessments.

2. **Discuss what the program is doing particularly well in terms of its processes for the assessment and improvement of student learning, for example, the use of a common rubric or prompt, a signature assignment, etc. *(200 words or less)***

   The program has adjusted its curriculum (as discussed in 5 and 6). This appears to be fruitful; the program is encouraged to continue this process, especially in regard to required courses.

Dean's signature: Jenny McNulty **Date:** 1/12/2024