2022 ANNUAL ACADEMIC ASSESSMENT REPORT FORM
(Due October 15 to the dean)

The Faculty Senate Academic Assessment Committee (AAC) is committed to a vision of assessment that leads to continuous program improvements and benefits students. Annual assessment reporting informs decision making and resource allocation aimed at improving student learning and success. It also enables the AAC to analyze assessment across the institution and to respond to UA System, Board of Regents, legislative, and Northwest Commission on Colleges and Universities (NWCCU) requests. We thank you for your continued support of and participation in this annual activity.

Starting in Spring 2021, UAA moved to one academic assessment reporting mechanism. The below form merges and streamlines the former Annual Academic Assessment Survey and the Annual Academic Assessment Report. It also incorporates questions about how academic programs contribute to student achievement of institutional core competencies and to student success.

This annual report will be due to the dean on October 15. Programs with suspended admissions and new programs in the first year of implementation are not required to complete this form.

These reports are public documents and will be posted on the assessment website. Responses are to be narrative only, and must be ADA- and FERPA-compliant. Do not embed any links, including to webpages or other documents. To be FERPA-compliant, do not include the names of any current or former students. Rather, use statements such as, "In AY22 four program graduates were accepted to graduate programs in the field." Programs with specialized accreditation or other external recognitions must comply with restrictions regarding what can be published, as per the accreditor or external organization. Do not include appendices. Appendices to this form will not be accepted.

The form uses narrative, text, and drop-down boxes. Narrative boxes have a character limit, which includes spaces. When using text and drop-down boxes, if you want to undo an answer, press "Control-Z" or "Command-Z."

Note: To ensure the fillable fields function correctly, the form must be completed in Microsoft Word. It will not function properly in Google Docs. Programs that wish to record collaborative discussion of the report might consider creating a separate document to take notes, before entering final responses in the official fillable form.

For technical assistance with this form, email Academic Affairs (uaa.oaa@alaska.edu).

PROGRAM SECTION (Due to the dean on October 15)

After completing the Program Section, 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.

Submission date: 10/14/2022

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

Program(s) covered in this report: Applied Geological Sciences MS

   If you selected "Other" above, please identify. *(100 characters or less)*

College: College of Arts and Sciences

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

Specialized accrediting agency (if applicable): N/A
   If explanation is necessary, such as only some of the certificates and degrees are covered by the specialized accreditation, briefly describe:

INSTITUTIONAL STUDENT LEARNING CORE COMPETENCIES

In 2020, UAA launched a consensus-based, deliberative process to identify the key skillsets that help students achieve academic and post-graduation success. After a year-long process that included students, faculty, staff, administrators, alumni, and employers, the UAA community identified four core competencies at the heart of a quality UAA education. Students develop mastery of these competencies through curricular (e.g., courses), co-curricular (e.g., internships, conferences), and extra-curricular (e.g., student clubs) learning experiences.

After the stakeholder-based process in AY20, UAA is phasing in the integration of the core competencies into ongoing processes, including program student learning outcomes assessment. Personal, Professional, and Community Responsibility (PPCR) was integrated into the AY21 Annual Academic Assessment Report. The AY22 Annual Academic Assessment Report now also integrates Effective Communication.

Question #1 below is designed to engage program faculty in thinking about how they can or already do promote student learning in these two core competencies.

1. A. *Personal, Professional, and Community Responsibility: The knowledge and skills necessary to promote personal flourishing, professional excellence, and community engagement.*

    ● **If last year you provided your program's current or planned example of an intentionally designed course, assignment, or activity that develops and showcases the student learning in this core competency, please discuss that implementation and any observations you have regarding how well it is working. *(500 characters or less)***

    We have a current course that fosters this competency (PPCR): GEOL 698 Graduate Professional Practices, where students learn about the expected behavior of a professional geoscientist, including writing professional reports and oral presentations. This course appears to work well in supporting the PPCR competency as students practice working in groups, networking, communicating ideas, learn ethical behavior, and interact with potential employers in the community (e.g., through career fairs). Students also practice writing a full proposal (e.g., NSF 15 page style).

    ● **If last year you *did not* identify a current or planned example of an intentionally designed course, assignment, or activity that provides students the opportunity to develop and showcase this core competency, please identify one now. *(500 characters or less)***

    B. *Effective Communication: The knowledge and skills necessary to engage in effective communication in diverse contexts and formats.*

    ● **What would you hope a student would say if asked where in your program or support service they had the opportunity to develop proficiency in this core competency? *(500 characters or less)***

    Students in the MS Geology program would likely say that aspects of this core competency are developed in all their graduate courses (especially Geology Graduate Professional Practices), but also, and perhaps to a greater extent, while completing their research theses (e.g., professional and responsible interaction with colleagues). Also, students in the MS program learn to network, manage their time, market themselves, and conduct themselves in a professional manner (including interviewing for jobs and internships).

    ● **Provide your program's current or planned example(s) of an intentionally designed course, assignment, or activity that showcases the student learning in this core competency. *(500 characters or less)***

    Although there are many opportunities to showcase this competency, the best example is the geology career fair. At this geology focused career fair, students have an opportunity to meet with different employers and communicate their backgrounds, skills, interests, and future employment plans. Students often use materials from courses in the Department (especially Geology Graduate Professional Practices), like resumes, figures from student research projects, and stories about field experiences. Students also practice communicating in the field in some class activities.

PROGRAM STUDENT LEARNING OUTCOMES

2. Please list the Program Student Learning Outcomes your program assessed in AY22. For each outcome, indicate one of the following: Exceeded faculty expectations, Met faculty expectations, or Did not meet faculty expectations.

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

1. Use rigorous methods of scientific analysis. Met faculty expectations
2. Demonstrate mastery of graduate-level geological sciences theory. Exceeded faculty expectations
3. Conduct advanced geological sciences research and/or demonstrate technical skill application. Exceeded faculty expectations
4. Apply the scientific method to graduate-level problems in one or more focus areas of geological sciences. Met faculty expectations
5. Work effectively within the professional framework of geological sciences careers or be prepared for Ph.D. research programs. Met faculty expectations

3. Describe your assessment process in AY22 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. *(750 characters or less)*

Assessment of performance in these five categories is accomplished through four assessment measures:

A.   Direct Course Level Assessment (CLA)
FALL 2021
GEOL A689 Geology Graduate Professional Practices
GEOL A641 Paleoclimatology
GEOL A661 Advanced Geochemistry
B.   Exit surveys
Some graduate students expressed interest in opportunities for geoscience graduate studies beyond a MS (e.g., PhD) at UAA.
C.   Thesis defenses or comprehensive examinations
No completed thesis defenses, but three proposal presentations were completed.
D.   Theses or projects
One completed thesis project

4. **What are the findings and what do they tell the faculty about student learning in your program?** *(750 characters or less)*
    The SLOs and outcomes (letter grades) for AY 2021-2022 that could be assessed are as follows:
    iv. Demonstrate critical thinking skills through synthesis of geologic information: A -
    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 2020-2021.

5. **Based on the findings, did the faculty make any recommendations for changes to improve student achievement of the Program Student Learning Outcomes? Please describe the recommended action, what improvement in student learning the program hopes to see with this change, the proposed timeline, and how the program will know if the change has worked. If no recommendations for changes were made, please explain that decision.** *(750 Characters or less)*
    The faculty haven't made any explicit recommendations for changes. Last year, some grad students wanted more stand-alone grad courses. The faculty understand the issue, but creating more stand-alone grad courses is not possible now given current faculty shortages in our department (e.g., geophysics). We had four new grad students start in fall 2021. However, due to the variable funding resources from faculty research projects and limited TA positions, there might not be new MS students every year. Our MS program is represented at various national conferences (e.g., Geological Society of America) and we have successfully recruited MS students from across the country, many with competing offers. We also continue to work with our Community Advisory Board to keep providing internship opportunities for grad students (e.g., USGS), which helps student success (see #9).

PROGRAM IMPROVEMENTS AND ASSESSING IMPACT ON STUDENT LEARNING

6. **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 AY22.

If you checked "Other" above, please describe. *(100 characters or less)*

7. **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.** *(750 characters or less)*
   N/A: We have not made any changes as no clear concerns about the delivery or effectiveness of the program were raised by previous assessments.

STUDENT SUCCESS AND THE CLOSING OF EQUITY GAPS

Student success depends on many aspects of a student's experience. On the academic program level, it can relate to correct placement, course sequencing, standardized pre-requisites across sets of courses, the intentional use of high-impact practices, proactive advising, course scheduling practices, etc.

UAA has selected the below metrics as student success metrics for accreditation.

In response to faculty questions and concerns about reporting on these data without more discussion and training, we will spend AY23 exploring together what equity data are and are not, how they can be used responsibly, and what programs can do to close equity gaps in student achievement on the below metrics, as well as to improve overall student achievement on them. UAA has a team participating in the NWCCU Data Equity Fellowship, and that team will help to guide these conversations.

8. **PROGRAMS ARE NOT REQUIRED TO RESPOND TO QUESTION #8 FOR THEIR REPORT DUE ON OCTOBER 15, 2022. IT IS HERE JUST FOR THEIR REFERENCE.** **Describe the actions your program is taking to improve student achievement on one or more of the following metrics. Also, describe any resulting improvements in student learning.**

Metric	Definition	Rationale
UNDERGRADUATE COURSE PASS RATES BY COURSE LEVEL (Undergraduate lower-division, undergraduate upper-division).	The percentage of students who receive a passing grade (A, B, C, P) for all undergraduate students in a course offered by a program compared to the same rate calculated for all courses at that level. Based on a 5-year trend.	Low pass rates are one critical way to identify courses that are barriers to student success and degree completion. Failing key courses correlates with low retention and more major switching. Mitigation strategies can be internal or external

Metric	Definition	Rationale
	Included in the denominator for undergraduate courses are the grades D, F, W, I, NP, NB. *Data source: RPTP end-of-term freeze files. Disaggregate as per accreditation.*	to the course itself, including, among other things, the use of high-impact pedagogical practices, appropriate placement, course sequencing, tutoring, and other means to ensure student success within a particular course. This metric and the disaggregation of the data can inform planning, decision making, and the allocation of resources to programs and services designed to mitigate gaps in achievement and equity.
ANNUAL RETENTION 1ST TO 2ND FALL	Traditional measure of the % of first-time, full-time associate and baccalaureate degree-seeking freshmen who enter in a given fall term and return the following fall. *Data source: UA System Warehouse RPTP/DEDMGR end-of-term freeze files. Disaggregate as per accreditation on an annual basis.*	Following the student from the 1st fall to 2nd fall can indicate ongoing connections and support inside and outside of the classroom are motivating students to return to continue their studies at the institution. Continuing enrollment is a key factor in completion.
SEMESTERS TO DEGREE – GRADUATE PROGRAMS	The average number of semesters taken by students to complete any graduate degree or graduate certificate program. Determined by students who have graduated from a graduate program as their primary degree. 5-year trend. *Data source: UA System Warehouse RPTP/DEDMGR end-of-term freeze files. Disaggregate as per accreditation on an annual basis.*	Looking at the number of semesters graduate students take to complete their degrees illustrates how students progress through their degree programs (full-time, part-time, stop-out). This information on student behavior and completion can inform program structure and help the institution support students in a way that honors the time needed for rigorous intellectual engagement and growth and also ensures that students can complete in a timely manner.

9. **Do you have any examples of post-graduate success you want to highlight? For example, major scholarships, the percent of students who pass licensure examinations, the percent of students accepted to graduate programs, the percent in post-graduation employment in the field or a related field.** *(750 characters or less)*

One student (2021 MS grad) recently started a PhD program at Cornell University. A current grad student received a NASA Alaska Space Grant fellowship this year in support of her MS thesis work on Jupiter's moon Europa. A 2022 MSAGS graduate is now working for Haliburton.   One student

secured full-time employment with a geotechnical firm. Another secured a high-paying position with State of Alaska. Both students are working while finishing their theses for their MS degrees. One student (MSAGS 2019) was promoted at Hillcorp, Alaska. Another student (MSAGS 2020) was promoted at Hillcorp and moved to the headquarters in Houston, TX. Two current grad students won grants for their thesis research from American Water Resources Assoc. (AK chapter) and one of them also received a grant from the Society of Wetland Scientists.

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?** *(750 characters or less)*

The Department is encouraged to come up with a sustainable model for the graduate program which should include a recruitment plan (as mentioned in the report) as well as an analysis of the time to completion. There is a great need in Alaska for graduates of this program, hence the urgency to attract more students into the program and to prepare them in a timely manner for job opportunities.

2. **What is the program doing particularly well in terms of its processes for the assessment and improvement of student learning, for example, the achievement of the Program Student Learning Outcomes, the closing of equity gaps, or addressing the core competencies?** *(750 characters or less)*

The Department does a good job of providing internships and other work-based opportunities. The geology career fair creates opportunities for students to interact with potential employers and to understand and plan for their future careers. They also have a robust assessment process that includes the analysis of courses ("Direct CLA"), the use of exit surveys, and the analysis of various presentations.

Jenny McNulty

Dean's signature: _____   **Date:** January 9, 2023