

Geological Engineering - Master of Science - Mid-Cycle Review & SLOA Year

Current Compliance Year: 2022-2023

Mid-Cycle review

Recent Recommendations

Feedback will include recommendations from the last Expedited Review or from your most recent review by your school or college. You may not see any feedback or recommendations until you have completed your first full or mid-cycle review.

Response to Previous Recommendations (if any):

No feedback was included prior to this submission, most likely due to the transition to the new SLOA reporting system.

Student Learning Outcomes

The previous Student Learning Outcomes Assessment has been submitted as its own report. Going forward you will use the following prompts to discuss the success of your most recent SLOA plan and address your assessment activities since your last SLOA report (typically the past two years or since your last program review).

Learning outcomes feedback from last review:

Feedback will be provided once you have completed a full or mid-cycle review.

Discuss your SLOA findings, changes you are making and what you hope to see as a result:

GE faculty collect 1) students' admission files evaluations, 2) evaluations of students' comprehensive exams and projects/theses, 3) evaluations of students' leadership and/or ability to interact with industry, 4) students' publications and conference presentations, and 5) evaluations of students' oral and written communication skills.

Over the review period, we evaluated two students who finished their MS degrees in Geological Engineering. On a scale of 1-10 (10 being the best), the average score for all evaluation elements was 8.8 for these two students. Neither student had scores low enough to trigger action and program changes.

Discuss the curricular changes made based on assessing your SLO. If you haven't made any curricular changes, please explain why not and address what you did notice in the review, including strengths of your curriculum through the assessment of your outcomes:

No curricular changes were made based on the assessment of the student outcomes. The students assessed demonstrated satisfactory to excellent technical understanding and computational abilities, oral presentation skills, and technical writing.

Are communication outcomes embedded in the SLOA Plan?

As of 2017 all Baccalaureate programs were required to embed the communication outcomes within their SLOA Plans, this is optional for non-Baccalaureate programs.

Embedded

Student Success

To access the Student Success Dashboard please sign into a UA computer with VPN connection (if not on campus). You will need your UA credentials and it is best accessed with the most updated version of Chrome, Edge, Firefox or Safari browsers; Internet Explorer is not supported. You will need to filter the data to see your programs. If you need assistance in finding the data for your programs, please contact your data liaison or [Julia Manfredini](#) in the PAIR office.

Data Liaisons

Each school or college has a team of Data Liaisons to help you analyze the data provided in the portal and may be able to help you see your data in multiple contexts. You can find a list of data liaisons on the resources page for Program Review.

The college or school level committee will also have access to this data with the goal that by providing these visualizations data availability will be increased.

Data supplied within the dashboard linked below is intended for Academic Program Review and not for any other purpose.

[Student Success Data Dashboard](#)

Previous Feedback

Feedback will be provided once you have completed a full or mid-cycle review.

Student Success Data Trends:

Decline in SCH, Decline in majors, Decline in degrees awarded, No change in persistence, No change in pass rates, Something else (use data explanation field to describe)

If equity gaps were found in any of your disaggregated student success data, please explain how you plan to address those gaps. Please contact your data liaison or make an appointment with [Julia Manfredini](#) to learn more about analyzing your data.

There were only 3 to 4 MS students per year in the GE program during the period of review. It is difficult to analyze trends for such a small group of students; however, no equity gaps are apparent in the student success data.
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Optional Data Explanation

Feel free to share more of your thoughts on the data provided.

Over the last five years, the number of GE MS students has remained relatively constant, with the number changing from 4 to 3; however, this slight downtick in enrollment accompanies multiple years of budget cuts to the university, as well as the proposed cut of the GE MS program. Negative press has definitely hurt our enrollment. Despite this, the number of degrees awarded has been constant, with the steady completion of MS degrees. According to the PAIR data, the GE program has had a 100% graduation-informed persistence rate for the last four years. Despite the small number of students, the GE MS program is successful, and produces Geological Engineers who work for a variety of state agencies and consulting companies around Alaska, solving problems germane to our State.

High Impact Practices

According to the AAC&U, High-Impact Educational Practices "have been widely tested and have been shown to be beneficial to college students from many backgrounds." UAF is particularly interested in Undergraduate Research and/or Scholarly Activity because it is one of our mission fulfillment indicators, but all of these researched High-Impact Educational Practices should be reflected in your program's student learning outcomes and curriculum.

Previous Feedback

Feedback will be provided once you have completed a full or mid-cycle review.

High-Impact Practices Used in this Program

Please use the following fields to discuss how your program is using the high-impact practices, successes and known issues and solutions, or ways you are considering incorporating them in the future. If you are not using any of the high-impact practices listed, please use the "Other or None of These," field to share what your program is doing to help students be successful.

High Impact Practices that currently apply to your program:

Writing-Intensive Courses

Other or None of these (explain)

Submission

Submitter & Collaborator Names

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Submitter Email

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College or School Review Committee

The college or school committees set the tone for helping each program feel seen during this process. We have provided you with strength-based feedback tags to attach to this program review. Please select as many as applicable.

Overall Recommendations

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Explanation of Recommendations

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Student Learning Outcomes Assessment Feedback (tags)

Strong alignment with SLOA plan

Student Learning Outcomes Assessment Feedback (narrative)

Thank you, the committee does appreciate your updated SLOA plan. It appears that there are some opportunities to assess individual student learning outcomes within the MS program during a student's tenure; comprehensive exams, graduate research project/thesis. This committee is interested in knowing how these activities are assessed, is there a consistent rubric used, or are there other forms of assessment used? It is encouraged to include discussion of these forms of assessment in your upcoming program review.
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Profile Feedback

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Financial Feedback

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Student Success & Equity Feedback

Despite the small numbers of degrees and graduates within the MS GE program, it is positive to see that there are no apparent equity gaps. In addition, it would be helpful to see discussion of the tags that you have chosen and justification for those choices.

High-Impact Practices Feedback

The committee recognizes that presenting research at conferences and other public opportunities as high-impact practices. It is also important to know that there are many activities that can be considered as High Impact Practices. Several possibilities can be; Capstone Courses and Projects, Collaborative assignments or projects, ePortfolios, Diversity/Global Learning, Internships, Learning communities, Service Learning, Community-Based Learning , as well as Graduate Research. Considering if you do use any of these practices or ways to add them to programs may help enhance the student experience and learning.

UNIVERSITY OF ALASKA FAIRBANKS
Student Learning Outcomes Assessment Plan
Master of Science in Geological Engineering
 College of Engineering and Mines
 April 7, 2021

Expanded Statement of Institutional Purpose	Intended Objectives/Outcomes	Assessment Criteria and Procedures	Implementation (what, when, who)
MISSION STATEMENT: To advance and disseminate knowledge related to mineral and energy exploration, evaluation, development and production; engineering site selection, construction and construction material production; and groundwater and geo-environmental engineering including geologic hazards assessment, through creative teaching, research and public service with an emphasis on Alaska, the North, and its diverse peoples. GOAL STATEMENT: To develop professional expertise beyond the undergraduate program in areas of research pertinent to the needs of Alaska and industry.	(1) Students will apply advanced knowledge of mathematics and engineering sciences related to geological engineering.	ENTRY: GRE Score	The faculty will review the student's GRE score included in the student's application to the graduate program.
		EXIT: Evaluation of the student's graduate research project/thesis and graduate comprehensive exam covering subjects of the required and technical courses by the graduate advisory committee.	The graduate comprehensive exam will be administered at least one semester before the student's thesis/project defense.
	(2) Students will demonstrate in-depth knowledge in the areas related to geological engineering, particularly in the student's specialized field.	ENTRY: Review of student's academic record.	The faculty will review the student's academic record and provide guidance on how to overcome and identified deficiencies.
		EXIT: Evaluation of the student's graduate research project/thesis.	The student's thesis or project report will be reviewed by the student's advisory committee during the student's last semester.
	(3) Students will carry out a design or research project independently.	ENTRY: Review of student's academic record.	The faculty will review the student's academic record and provide guidance on how to overcome and identified deficiencies.
		EXIT: Evaluation of the student's graduate research project/thesis.	The student's thesis or project report will be reviewed by the student's advisory committee during the student's last semester.
	(4) Students will identify and solve engineering problems independently.	Evaluation of the student's thesis or project, and graduate comprehensive written exam.	The student's advisory committee will evaluate the student's thesis or graduate project. The graduate comprehensive exam will be administered at least one semester before the student's thesis/project defense.
	(5) Students will demonstrate leadership ability and/or ability to interact with industry.	Evaluation of the student's performance during the course of his/her study in the program.	During the student's tenure in the program, the faculty will monitor and evaluate the student's performance in research, teaching, communication, and leadership, as applicable.

Submitted by: Margaret Darrow

			• For a student who is working as a Research Assistant, an evaluation of their communication with the funding agency, progress and impact of their research, and how well they work with the research team will be addressed. • For a student who is working as a Teaching Assistant, faculty will assess their communication in teaching in addition to their research progress. • If students are members of student/professional organizations, then their leadership roles or contributions to the profession will be assessed and evaluated. • For students who fund their own studies, assessment will be based on their research progress, communication skills, and leadership.
	(6) Students will demonstrate good oral and written communication skills.	Evaluation of student's in-class oral presentations, publications, and presentations at professional conferences and meetings.	The student's graduate committee will review the student's thesis/project report and other publications. The committee also will evaluate the student's communication skills during the final oral exam (thesis/project defense).