Mathematics - Bachelor of Art - 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):

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:

Data collection (in particular, the exit surveys) was somewhat interrupted due to the pandemic. However, we did consider scores on the ETS Field Test as outlined in our SLOA plan. Scores on the ETS Field Test accurately reflected the academic performance of the students who graduated. Because of the challenges of collecting data in two different concentrations in one department, we will be having a faculty member serve as an assessment coordinator for the department, and we plan to revise our exit survey strategy. [redacted], [redacted], and [redacted] looked at the ETS scores and academic performance of graduated students over the SLOA reporting period. We have revised our SLOA to better assess the communication goals in our major.

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:

- Added corequisite instruction for Calculus I to improve student success.
- Revised course numbering for many undergraduate electives to avoid number collisions with UAA and UAS.
- Increasing credits for the required mathematics concentration capstone course MATH F490 from 2 to 3 so that math majors aren't one upper-division credit short in certain pathways

- Revised upper-division elective course offering schedule to streamline the transition between undergraduate and graduate courses
- Added BS/MS Mathematics and BS Mathematics / MS Statistics and Data Science to develop accelerated pathways for motivated students

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.

Not 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:

Equity gaps,Decline in majors,Increase in degrees awarded,No change in SCH,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.

An increasing disparity in pass rates between [redacted] and [redacted] students is seen between 2018 and 2022 (and somewhat similarly between first-generation and non-FG students). The same problem is borne out by the degrees-completed data over that period. The trend was evident in 2019 but became pronounced in AY2019-2020 and continues thereafter. We conjecture that our unexpected transition to online learning modalities in 2020 disrupted lower-income students more than their higher-income

peers. The trend's persistence could be due to our continuing reliance on novel modalities or to lingering student deficits caused by the pandemic, or some combination of the two. We plan to address this trend byoffering courses in multiple modalities to try to meet student learning needs.
We also observe a gap in pass rates between [redacted] and [redacted] students on the one hand, and [redacted], [redacted] and [redacted] students on the other hand, of about 10 - 15%. It would be helpful to have data on raw numbers of students in each of these categories. We are increasingly incorporating high-impact strategies into our GER courses—in particular, active learning and alternative assessment strategies—which have been shown to increase success outcomes in particular for underrepresented groups.

Optional Data Explanation

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

The "something else" we saw in the data was "high volatility seen in persistence". Also, we note that while the SCH for our "internal" teaching -- that is, courses for our majors -- remained fairly constant, and while the "service-in unit" SCH (that is, to other CNSM students) was reasonably flat, we saw a significant drop in SCH for "service-outside unit". It would be helpful for this "service-outside unit" to be further disaggregated by college. We conjecture that much of the SCH drop is due to the corresponding drop in engineering enrollments, as well as the overall drop in UAF enrollments, since historically the vast majority of our SCH has been through service teaching through 100-level GER courses and STEM-math courses (calculus sequence, Math F230).
We would like to have raw counts available for all data provided through percentages. This is particularly important for the disaggregated student data. We would like to be able to download lists of students being counted for our majors and our graduates-we have concerns that some students listed as our majors are not ready to matriculate into the major or are . There should be a data liaison at PAIR, rather than faculty or staff in the college, who can answer specific questions about data definitions and data provenance.

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," filed to share what your program is doing to help students be successful.

High Impact Practices that currently apply to your program:

Collaborative Assignments and Projects,Writing-Intensive Courses,Capstone Courses and Projects

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

Explanation of Recommendations

Student Learning Outcomes Assessment Feedback (tags)

Strong alignment with SLOA plan

Student Learning Outcomes Assessment Feedback (narrative)

The program is using the ETS Major Fields Test in Mathematics to assess content knowledge. The program might consider what score they would count as meeting the learning goals for their students.
The exit survey is an indirect measure, which seems to focus more on students' experience in and satisfaction with the program than student learning outcomes.
The program is planning to have a faculty member as assessment coordinator, which is a good step.
The program might consider that outcomes assessment is intended to be a collaborative learning experience for the program or department. This is an opportunity to share results and discuss how to enhance the students' experiences and make curricular decisions based on the results of assessments.
The program indicates having revised the SLOA plan to better assess the communication goals. Using final exams in several classes and reviewing them by a faculty committee seems to adequately assess this outcome.
SLOA plans are identical for the programs in your department. It is essential that different programs have different outcomes- if students are intended to learn the same things, how are the programs differentiated?

Profile Feedback

Financial Feedback

Student Success & Equity Feedback

The program provides a thoughtful discussion of equity gaps and ways they are planning on addressing them.
The program indicated a decline in majors, however according to the data, after decreasing majors from 11 in 2018 to 6 in 2019, the number of majors has steadily increased to 12 in 2022.
The program indicated an increase in degrees awarded, however, according to the data, there have not been any BA degrees awarded in this program since 2019.
The program is encouraged to review and discuss this data.

High-Impact Practices Feedback

The program lists and thoughtfully discusses several high impact learning practices.

UNIVERSITY OF ALASKA FAIRBANKS

Student Learning Outcomes Assessment Plan

Mathematics Undergraduate B.A./B.S. Degree

College of Natural Sciences and Mathematics

Revised November 2022

Expanded Statement of Institutional Purpose	Intended Objectives/Outcomes	Assessment Criteria and Procedures	Implementation (what, when, who)
MISSION STATEMENT: We shall provide a high quality mathematics education responsive to the needs of individual students and the diverse population of Alaska	Students will attain mastery of core mathematical concepts at the baccalaureate-level comparable to those at other institutions.	We will give the ETS Major Fields Test in Mathematics to all majors, preferably close to graduation.	Every spring the instructors of Math 490 and Stat 454 will require all students to take the Major Field Test in Mathematics. The Assessment Committee will review test results and discuss any needed changes
GOAL STATEMENT: To assure that our graduates attain a solid understanding of mathematics and are adequately prepared to succeed in the job market or advanced study.	Students will have opportunities to develop the necessary skills to achieve their career goals in mathematics.	A) Exit Survey B) Tracking of recent graduates	Every spring, the instructors of Math 490 and Stat 454 will require all students complete an exit survey that includes questions about students' views of the program and information about their post-graduate plans. Faculty will be surveyed annually regarding recent graduates. A list of graduates will be maintained.
	Communications Students will understand and write formal mathematical arguments. They will demonstrate the ability to solve problems using mathematics and to independently craft effective written explanations of mathematical material.	Portfolios of final exams from at least two writing-intensive mathematics courses.	At the end of every semester, final exams in MATH 215, MATH 401, and MATH 405 will be retained. The communication skills of graduating students will be evaluated by the Assessment Committee on a two-year cycle by reviewing students' writing portfolios.

Submitted by: