

Oceanography - Master of Science

Current Compliance Year: 2023-2024

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):

Time to degree: Over the past 5 years MS students have taken on average 2.9 years (n=11). In the last 2 years MS degrees have reduced to 2.6 years. This duration is typical for duration at other oceanography institutions.

Online offerings: Oceanography has always offered all core cores online, and now offers 2 of its 4 core courses asynchronously. Course offers have contracted due to loss of faculty but will be increasing with recent new hires. Retention of faculty and students continues to be a challenge.

Retention: In the last 5 years, 2 MS students left the program, either due to pandemic isolation, or a change in career goals – funding per se has not been an issue. This loss rate yields the misleading impression of longer time to degree when enrollment data is divided by graduation numbers.

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:

- 1.- All students have secured jobs or gone onto a PhD degree.
- 2.- Metric is not applicable to MS students over this period, as neither decided on an academic career option.
- 3.- Over the past five years, 4 MS students entered PhD programs in our department, and are making satisfactory progress towards their PhD degrees.
- 4.- All students have given talks or presented posters at national meetings, generally more than once.
- 5.- Students complete a proposal and thesis defense during degrees and field questions related to their work at national meetings.
- 6.- Over the past 5 years, 8 of 11 graduated students published work related to their thesis. Of the 3 who have not yet published, only 1 completed their degree more than 3 years ago.
- 7.- Returns on exist interview questionnaires have been too low to be useful metrics. The fact that 4 of 11 graduates started their PhD within our Oceanography program suggests overall satisfaction with their education

Changes: We have updated the SLOA Plan with metrics that can be better evaluated quantitatively. Courses that directly relate to the intended objectives are included. Artifacts for tracking student performance include Google forms completed by faculty for each student upon completion of courses, theses proposal presentations, and theses defenses.

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:

The comprehensive examination indicated students often struggled to successfully integrate the oceanographic subdisciplines to understand the ocean as a system. We have now replaced the comprehensive examination with a thesis proposal presentation and a requirement to successfully complete Integrative Oceanography Seminar (OCN633) during their second year (curricular changes pending). The seminar focuses extensive discussions of seminal and current oceanographic literature, with a lense on integration of oceanographic subdisciplines.

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: (please indicate the trends that apply to your program)

No change in majors, No change in degrees awarded, No change in SCH, No change in persistence

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.

Due to low sample size it is hard to read any consistent pattern or trends into the data on most metrics. See optional information below.

Optional Data Explanation

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

Dashboard: overview

At departmental level, the last five years have had the number of majors (MS and PhD) vary from 14-19. Students in the majors peaked 2020 & 2021, then fell slightly as students who were mid-program during COVID graduated, but they were not replaced at a similar pace given uncertainties in graduate education during the pandemic. Graduation persistence has not changed significantly over the past 5 years. Average pass rate has varied from 66-75% over that period, and is driven primarily by the high enrollment in our under-graduate program – particularly our course for non-biology majors – that contribute 80-90% of the courses taken in the department.

Given the low number of graduate students in the department, and the even lower number graduating annually, it is hard to read any significant temporal trends into the data regardless of metric. A notable exception is the distinctly lower pass rate of Graduate courses in AY19/20 and lower persistence from FY19/20 due to suspension of in-person classes in March 2020. Note that graduate course statistics include a small but significant number of non-majors that may perform more poorly than majors.

In terms of demographics for majors, notable patterns include a predominance of [REDACTED] (80-100%) at the MS level, but a roughly equitable mix at the PhD level, perhaps with increased [REDACTED] contribution over time. The majors are primarily [REDACTED], [REDACTED] and dominated (50-79%) by those [REDACTED] then [REDACTED]. PhDs tend to be older than MS students.

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:

Collaborative Assignments and Projects, Writing-Intensive Courses, Capstone Courses and Projects, Diversity/Global Learning

Collaborative Assignments & Projects

All graduate students undertake a project that forms the core of their degree,. As a consequence of oceanography's multidisciplinary nature, most projects (and associated sea-going activities) are collaborative. Many students also mentor undergraduate students in our program, assisting them with their undergraduate research and capstone projects.

Undergraduate Research

n/a

Diversity/Global Learning

Students are encouraged to attend International meetings and many students present their research at at least one international meeting. Some students participate in international sea-going research activities as part of their thesis.

ePortfolios

n/a

First-Year Seminars & Experiences

n/a

Writing-Intensive Courses

Thesis credits (OCE 699) are writing intensive, and students are expected to produce a manuscript destined for peer-reviewed publication. Students are required to write a thesis proposal, this is also a writing-intensive activity. Writing-intensive electives courses, such as OCN 677 are available. Many students write travel grants and/or grant proposals to agencies.

Service-Learning and/or Community-based Learning

Not a formal part of our program, although many graduate students engage with local communities in some form of outreach activity at least once during their degrees

Internships

n/a

Capstone Courses & Projects

Students are required to complete a thesis composed of at least 1 chapter. The expectation is that the thesis is in a publishable form and ultimately published in a peer-reviewed journal. The department covers the publication cost.

Other or None of these (explain)

Oceanography's multidisciplinary nature requires that students are able to integrate oceanographic disciplines to understand the ocean as a system. To accomplish this, MS students are required to take the Integrative Oceanography Seminar (OCN633) during their second year (curricular changes pending). The seminar focuses extensive discussions of seminal and current oceanographic literature, with a lense on integration of oceanographic subdisciplines.

Submission**Submitter & Collaborator Names**

Russ Hopcroft, Ana Aguilar-Islas, Christina Sutton

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

Improve time to degree,Develop online offerings/options,Increase retention/persistence
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Explanation of Recommendations

Many of the comments for the Oceanography MS and Oceanography PhD are the same because, outside of the student success data, the program reviews were identical. SLOA plans are very similar or identical for the programs in Oceanography. It is essential that different programs have different outcomes - if students are intended to learn the same things, how are the programs differentiated? Something to resolve, per some of the guidance below, for the full-cycle review in two years. The review panel acknowledges the time and effort that went into preparing the mid-cycle program review for the Oceanography M.S. program. The review panel appreciates that the program provided a thorough narrative for the HIPs (high-impact practices). The review panel would also like to emphasize the need for the full program review in two years and how it has addressed any declines in student success metrics.
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Learning Outcomes Feedback

Requires Minor Revision

Student Learning Outcomes Assessment Feedback (tags)

Strong alignment with SLOA plan

Student Learning Outcomes Assessment Feedback (narrative)

The program provided 5 SLOs for the revised Oceanography MS SLOA plan. The review panel offers the following recommendations to improve upon the program's SLOAs: - SLO #s1-4 were appropriate as measures of student learning. - SLO #5 is a program outcome and not tied to student learning. - The recommendation from the review panel is to reduce the number of SLOs from 5 to 4 by eliminating SLO #5. The program is encouraged to retain this measure of outcome assessment (#5; student program satisfaction) for their own internal tracking purposes (just not use it as part of program review). Note that tracking time to graduation and completion rates is a valid student learning outcome and that language could be used to revise this SLO to reflect that outcome. Per guidance from the NWCCU for accreditation purposes, they recommend that degree programs have between 3-5 SLOs per program (so the 4 remaining SLOs would meet that requirement). - SLO #4 should be retained but only if it is not evaluated as job placement because that is not an assessment of student learning from the program. For example, assessment of MS thesis writing quality is a valid assessment of student learning. However, post-graduation activities (e.g., publications) and job placement are not considered an assessment of student learning and are instead program outcomes. The recommendation from the peer review is to remove those elements from this SLO. - A 5th SLO could be added that directly assesses student learning from the degree program. The program might consider revising the outcomes to include more "action" words. It is difficult to assess things like "understand" or "recognize." "Identify", "explain", or "analyze" are clearer outcomes to assess. https://tips.uark.edu/blooms-taxonomy-verb-chart/. Provided well-developed rubrics and artifacts.

- Please remove individual student information from the artifacts to avoid disclosing FERPA protected information).

- Additional clarity could be provided on how the data are used to assess the SLOs; indicated in the summary of LO discussion that courses were listed in the SLOA plan (this was indicated in the revised SLOA).

Curricular changes noted the replacement of the comprehensive exam with a thesis proposal presentation and the creation of an OCN 633 integrative oceanography seminar.

Following NWCCU guidance, SLOA plans must emphasize "closing the loop" and continuous improvement, ensuring each SLO within the plan is assessed individually to verify alignment with program objectives. If a SLO fails to produce the expected assessment outcome, adjustments to SLO language, substantial changes to the SLO, or revisions to data collection rubrics are necessary to ensure alignment and facilitate program improvement.

Student Success & Equity Feedback

The program noted no change in majors (there was a decline from 9 to 5), degrees awarded (went from 1 to 2 to 4 to 2, so a decline since 2021), SCH (declined from 12 to 9), and GIP (increased from 78 to 83%).

There are equity gaps since the program consists primarily of [REDACTED]

The review panel feels that it would be beneficial to see how the program intends to address any equity gaps and declines in student success metrics.

High-Impact Practices Feedback

The program identified and provided a narrative (which included examples for each HIP) for collaborative assignments/projects, writing-intensive courses, capstone courses/projects, and diversity/global learning as HIPs; also provided a short narrative for service/community-based learning.

What percentage of students participate in each HIP for those that are optional?

The review panel recognizes that the HIPs employed by the Oceanography program are all positive and meaningful in preparing students to enter the workforce.

UNIVERSITY OF ALASKA FAIRBANKS
Student Learning Outcomes Assessment Plan
MS Oceanography
 College of Fisheries and Ocean Sciences
 September 2023

CFOS MISSION: The College of Fisheries and Ocean Sciences supports the needs of Alaska and its communities, the nation and the international community through research and training the next generation of scholars and leaders in the wise use of Alaskan and Arctic aquatic natural resources.

CFOS VISION: As one of the largest combined research and academic organizations in the University of Alaska system, and one of the most diverse colleges in both geographic reach and academic mission, we seek to be a:

- World-class ocean and inland aquatic research and educational organization, recognized as such by peers in the academic community and funding agencies.
- Primary source of knowledge, operational expertise, and basic and applied research to manage freshwater, estuarine and ocean resources in Alaska, including the Arctic.
- Source of well-trained and highly motivated graduates to staff organizations and agencies, in particular those in Alaska responsible for management of Alaskan and Arctic waters and their renewable resources.
- College of choice for faculty and students with interest in high latitude Arctic and sub-Arctic waters and their renewable resources.
- Trusted steward of state and national research and educational facilities.

Intended Objectives/Outcomes	Assessment Criteria and Procedures	Implementation (what, when, who)
Graduates will be subject experts	Goal: All students show knowledge of core oceanographic principles.	Evaluation of core course performance. Participation in the Integrative Oceanography seminar. OCN 620, 630, 650, 660, 633
Graduates will have excellent oral and written communication skills.	Evidenced by students' oral proposal, presentations & posters at meetings, thesis defense and thesis document. Goal: Students can communicate at a level commensurate with being a professional scientist	Evaluations of oral proposal and thesis defense and thesis document. Presentation of research at least one major conference (e.g., Alaska Marine Science Symposium). OCN 620, 630, 650, 660, 633, 699, electives e.g. OCN 677
Graduates will have experience in gathering data at sea or in the field.	Rating of skills developed through field work experiences. Goal: students participate in field work as part of their dissertation work or in a field course.	At-sea/field work are routine components of the program. All students conduct field work at least once, even if not required for their research. OCN 699. Electives: Subarctic Oceanography Field Course OCN 625, Oceanographic Techniques, or other independent studies.
Graduates will be prepared for working as professional scientist, who contributes to the body of scientific knowledge within an oceanographic discipline.	Graduates produce work that is of sufficient quality to submit agency reports or manuscripts to peer-reviewed journals. Goal: Graduates find agency, NGO, or other related employment, or go on to additional graduate school opportunities within a year of graduation.	Quality of writing in MS thesis. MS research submitted for publication within 2-3 years of completion. Job placement of subsequent graduate program
Students will be satisfied with the quality of their educational experience and time to graduation.	Assessment of overall experience in the MS Oceanography program amongst graduates. Goal: Students graduate from the program within 2-3 years.	Exit interviews and one-year post-graduation survey (annually, Academic Programs staff). Tracking of our time to graduation and program completion rates.

Submitted by: