

**BIENNIAL PROGRAM STUDENT LEARNING OUTCOMES ASSESSMENT REPORT FORM –
ASSESSMENT COMPLETED IN AY2023-2024 (Due to the dean on November 15)**

Submission date: 11/15/2024

Assessment Plan covered in this report: Biological Sciences BA/BS

College: College of Arts and Sciences

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

Submitted by: Rachael Hannah, Associate Professor, rmhannah@alaska.edu

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

Demonstrate an understanding of the core concepts in the biological sciences: evolution, structure and function relationships, information flow, exchange, and storage; transformation of energy and matter. - Met Faculty Expectations

- 2. Describe what your assessment process was last year 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)**

Our committee collected and analyzed the ETS data from 23/24. We compared these data with results from the last time we evaluated this learning objective. We also compared the scores of UAA biological sciences students with the national averages. We discussed the process and results with the Biological Sciences faculty on November 15th.

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

UAA Biological Sciences students who took the ETS Biology exam (N=36 students) in AY23/24 showed improvement over students in AY18-AY23. UAA students achieved or exceeded scores of peers at other comparable universities in Population Biology, Ecology and Evolution, and 5 of 9 assessment indicator subjects. UAA students were below average in three other subjects and 4 of 9 assessment indicators.

Detailed Summary:

UAA Biological Sciences students who took ETS Biology exam (N=36 students) in AY23/24 showed an increase of 1 to 2 test points of improvement (out of 100) in all four subject areas

(Cell Biology, Molecular Biology & Genetics, Organismal Biology, and Population Biology, Evolution & Ecology), in comparison to the average UAA scores from AY18/19.

In AY23/24, UAA students achieved at or above the national average for correct ETS Biology test scores in 5 of 9 assessment indicator subject areas (Biochemistry and Cell Energetics, Diversity of Organisms, Population Genetics and Evolution, Ecology, Analytical Skills); UAA students were below national average correct scores for four assessment indicators (Cellular Structure Organization and Function, Molecular Biology and Genetics, Organisms - Animals, Organisms - Plants). All score differences were within one standard deviation between years.

Students often take their cell and molecular biology courses within the first two years of earning their degree. They take the ETS exam in the junior or senior year of their undergraduate program. It is possible that some of the detailed information in the questions has not been retained at that level of detail.

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)**

After the conversation with faculty, while we are not recommending any specific programmatic changes, we have considered reviewing the test questions with faculty over the next year. While the committee does not love this instrument, we continue its use for longitudinal data.

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 last year. *(If no options above were selected)*

If you checked “Other” above, please describe. (100 words or less)

All faculty stay current with their content areas and incorporate the knowledge into their courses.

- 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)**

Although no specific changes were made it is interesting that in 18/19, we noticed lower scores in the organismal courses as compared to the cell and molecular courses. In 23/24, we saw the opposite trend with lower scores on the molecular and cell courses.

DEAN SECTION (Due to the program on January 15)

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

While the ETS gives nice longitudinal data, perhaps additional measures could be added to specifically address stated learning outcomes. For example, key course assignments and/or faculty report outs from selected upper division courses. Additionally, a description of which students take the ETS (as compared to all majors) would be helpful in assessing the program.

- 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 is large in both breadth and number, thus there is variability on instructors and elective offerings, thus some variability on exam scores is expected. The program does a good job of delivering the curriculum to a diverse group of students. The faculty involvement in the assessment process serves as a good model.

Dean’s signature:

Jenny McNulty

Date: 1/13/2025