

UNIVERSITY OF ALASKA FAIRBANKS
Student Learning Outcomes Assessment Plan
Biological Sciences BS
 College of Natural Science and Mathematics
 November 2024

MISSION STATEMENT: The Biology and Wildlife Department educates students from diverse backgrounds worldwide about living systems with an emphasis on the circumpolar North by fostering intellectual inquiry, problem solving, and creativity through coursework and research.

GOAL STATEMENT: The Biology and Wildlife Department aims to provide its students a strong foundation in biological knowledge; to empower them through course experiences, research and inquiry to think creatively, flexibly, and critically; and to prepare them to achieve their future educational and professional goals.

Intended Objectives/Outcomes	Assessment Criteria and Procedures	Implementation (what, when, who)
Knowledge Students will demonstrate mastery of knowledge of core biological concepts, including evolution, inheritance and the expression of genes, cellular and organismal structure and function, and biologically-relevant pathways and transformations of energy and matter.	All majors will take the Educational Testing Service's Biology Major Field Test (MFTB). UAF will score above the 50 th percentile of institutions on each of the four major subject areas in biology.	The ETS Major Field Test in Biology (MFTB) is administered to majors every semester during a required, senior level course, Principles of Evolution (BIOL F481). Implementation is the responsibility of the faculty teaching BIOL F481.
Communication Students will communicate biological subject matter effectively in writing and speech	Students will score "adequate" or better on all communication-related components of the capstone research project, including a written report, an oral presentation, and a non-technical summary.	Department faculty who teach capstone courses and mentor capstone students in research will evaluate all aspects of the project using a standard rubric. All student projects will be archived by the department.

Submitted by: Diane Wagner

Quantitative Skills Students will be able to apply quantitative approaches to problem solving in biology.	UAF will place above the 50th percentile of institutions on the Analytical Skills portion of the MFTB. Students will demonstrate ability to analyze, visualize, and interpret data within their capstone research project by scoring adequate or better on all quantitative aspects of the capstone evaluation.	The MFTB is administered to majors every semester during a required, senior level course, Principles of Evolution (BIOL F481). Faculty teaching capstone courses and mentoring students will implement the capstone evaluation.
Technical Skills and Collaboration Students will demonstrate technical and collaborative skills relevant to a career in biology.	Students will effectively and safely use laboratory equipment and apply software commonly used in biology to generate, share, and visualize data. Students will demonstrate collaborative skills by working in groups to design experiments, collect and share data, and create and give presentations.	Faculty teaching BIOL F115X, F116X, and F260 are responsible for evaluating technical skills and collaboration using rubrics.
Critical and Creative Thinking Students will demonstrate creative and critical thinking skills by designing, conducting, interpreting, and communicating a capstone research project.	Students will score “adequate” or better on all aspects of the capstone project related to critical and creative thinking.	Faculty teaching capstone courses and mentoring students will implement a standard capstone evaluation. The Teaching Advisory Committee will review capstone assessments every 4 years to evaluate overall consistency in these assessments.