

UNIVERSITY OF ALASKA FAIRBANKS  
**Student Learning Outcomes Assessment Plan**  
**Biological Sciences BA**  
 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<br>(what, when, who)                                                                                                                                                                                                  |
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| <b>Knowledge</b><br>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 (ETS) Major Field Test in Biology (MFTB). UAF will place above the 50 <sup>th</sup> percentile of institutions on two of four major subject areas. | The 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. |
| <b>Communication</b><br>Students will effectively communicate biological subject matter in writing and speech.                                                                                                                                                                             | Students will score “adequate” or better on communication-related components of the integrative capstone course, including the written interdisciplinary project and the oral presentation.             | Department faculty who teach the integrative capstone course evaluate all aspects of the project using a standard rubric. All student projects will be archived by the department.                                                   |
| <b>Quantitative Skills</b><br>Students will be able to apply quantitative approaches to problem solving in biology.                                                                                                                                                                        | Students in the major will place above the 50 <sup>th</sup> percentile of institutions on the Analytical Skills portion of the MFTB.                                                                    | The MFTB is administered to majors every semester during a required, senior level course, Principles of Evolution (BIOL F481).                                                                                                       |

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| <p><b>Technical Skills and Collaboration</b><br/>Students will demonstrate technical and collaborative skills relevant to a career in biology.</p>                                                                                               | <p>Students will effectively and safely use laboratory equipment and apply software commonly used in biology to generate, share, and visualize data.</p> <p>Students will demonstrate collaborative skills by working in groups to design experiments, collect and share data, and create and give presentations.</p> | <p>Faculty teaching BIOL F115X, F116X, and F260 are responsible for evaluating technical skills and collaboration using rubrics.</p>                                               |
| <p><b>Critical and Creative and Integrative Thinking</b><br/>Students will demonstrate critical, creative and integrative thinking skills by designing, and completing a project that integrates biological science with another discipline.</p> | <p>Students will score “adequate” or better on aspects of the integrative capstone evaluation related to critical, creative, and integrative thinking.</p>                                                                                                                                                            | <p>Faculty teaching the integrative capstone course BIOL F410 will implement the capstone evaluation. All student projects and evaluations will be archived by the department.</p> |