

M.S. Biology, Graduate Program Assessment Plan

Annually		
1.	<i>Which SLO(s) to assess</i>	PLOs 1, 2, 3, 4
2.	<i>Assessment indicators</i>	We plan to apply the <i>Thesis Proposal Rubric, Thesis Defense Rubric, Final Thesis Rubric, and Signature Assignment/Presentation Rubric</i> designed by Caron Inouye to the target artifacts. These rubrics will be designed to assess at least three, and in the case of the proposal and final thesis all four, PLOs simultaneously.
3.	<i>Source of sample work: course #, student #, instructor</i>	Thesis proposal, thesis defense, final thesis, select courses/seminars (to be determined).
4.	<i>Time (which quarter(s))</i>	Every quarter, depending on when the students complete their proposals, defenses, and final theses and take the key courses/seminars.
5.	<i>Responsible person(s)</i>	The thesis committee of each student (thesis advisor will be in charge of ensuring compliance for the committee); the faculty member teaching the courses/seminars in which signature assignments/presentations are selected; Maria Gallegos (Graduate Advisor) and Caron Inouye (EEC Representative and Dept. Curriculum & Assessment Committee, CAC, member) will keep track of all incoming artifacts.
6.	<i>Ways of reporting (how, to who)</i>	The Graduate Advisor and CAC Chair will compile and analyze all student assessment data and submit a summary report to the Chair. This information will then be distributed to the faculty for discussion at a faculty retreat.
7.	<i>Ways of closing the loop</i>	Faculty will meet to discuss data and brainstorm ways to improve the curriculum in order to help students achieve PLOs. See more details below on how the department plans to close the loop.

Assessment Tools

PLO 1. Use of key (signature) assignments scored with standardized rubric in select courses by course instructors; thesis proposal scored with standardized rubric by thesis committee; thesis defense by thesis committee.

PLO 2. Use of key (signature) assignments and/or presentations in seminar courses scored with standardized rubric by course instructors; thesis proposal by thesis committee; final thesis by committee.

PLO 3. Thesis proposal scored with standardized rubric by thesis committee; final thesis scored with standardized rubric by thesis committee.

PLO 4. Thesis proposal scored with standardized rubric by thesis committee; final thesis scored with standardized rubric by thesis committee.

Graduate Program in Biology PLO-Assessment Tool Alignment Matrix

PLO	Coursework (key assignments, presentations)	Thesis proposal	Thesis defense	Final Thesis
1. Content mastery	X	X	X	X
2. Info literacy	X	X		X
3. Research		X	X	X
4. Communication	X	X	X	X

Closing the Loop

Faculty will use the assessment results to inform any curriculum changes, pedagogical improvements, revised course student learning outcomes, and refined programmatic student learning outcomes as needed. Assessment tools will also be refined as needed. Immediate needs that have been identified by biology faculty include the following. (1) As the current graduate curriculum matrix reveals, Biology needs to restructure its graduate program curriculum, so that the M.S. program includes a more deliberate pathway for all M.S. Biology students. Currently, with the exception of those in the Biotechnology M.S. program, graduate students take courses in no particular sequence and only to fulfill unit requirements. We are considering developing a first-year set of courses/experiences for our Master's students that would include teaching assistant training, research design/quantitative methods, and writing a

research proposal and grant proposal. The graduate curricular pathway will follow a sequence that builds to the capstone experiences of the thesis defense and final thesis. (2) The department is currently developing standardized rubrics that will be applied by the thesis committee of each graduate student to the student's thesis proposal, thesis defense (oral), and final thesis (written). The thesis proposal is typically completed by the end of the first year of the graduate program, so the proposal assessment will capture student progress in achieving the PLOs early in the student career. Rubrics for signature assignments will capture student progress during mid-program, e.g., in seminar courses. The oral thesis defense and written final thesis are capstone indicators of student achievement in the PLOs, and the results of the assessments of these artifacts can be compared to the other earlier indicators (thesis proposal and signature assignments) in order to monitor progress and inform where programmatic improvements should be made.