Academic Program Assessment
AY 2025-2026 [Due 6/1/26]

Program Name	Date Completed
Biology MS	**6/9/26**
Report Completed By	Report Contributors
Claire Ramos	**Garcia Costas, Caprioglio, Gabaldon, Sandmeier, Trumbo, Martinez, Smith, Diawara, Izaguirre-Sierra**
Brief Statement of Program Mission and Goals	
The Biology Program provides the biological component of the liberal arts education. We promote student understanding of biological concepts relevant to the individual and society, and foster an appreciation of scientific inquiry. Biology is an integral subject for other majors' requirements and the Biology department is committed to fulfilling these service courses and general education for other departments. The graduate program leading to the degree of Master of Science in Biology prepares students to apply basic scientific principles to the practical biological problems encountered in business, industry, government, and education. Graduates from the program will be able to apply the techniques of scientific research to real-world biological problems. Our students obtain a broad education, covering a wide variety of biological disciplines. We focus on the student, facilitating hands-on experience, interactions with faculty, and opportunities for graduate research in topics of regional interest.	

Table I Closing the Loop

Report on at least one data-informed change to your curriculum during AY 2024-2025 that was implemented to improve student learning, in response to prior assessments or other data.

A. Describe issues or SLOs addressed in the AY 2024-2025 cycle. Paste SLOs verbatim below.
Time to graduation and reason for leaving the program
B. In which academic year and semester was this SLO last assessed to generate data that informed the change(s)?
2025
C. What were the recommendations for change in the previous cycle? (See Column H in the previous cycle's report.)
Continue a mandatory peer support group to encourage progress on thesis writing. Group meetings will be required for students enrolled in BIOL 589 Thesis Defense and CR 500 Continuing Registration. The group will be facilitated by the graduate director.

D. How were the recommendations for change acted upon?

Coordinating a weekly meeting for the students in BIOL 589 and CR 500 has proven to be too challenging to find a consistent meeting time. In addition, the time burden on the graduate director has proved unsustainable. Another means of supporting finishing students will need to be found.

E. How did the change(s) impact student learning? If the change was not effective, what are the next steps or new recommendations?

In the past year, one student in the cohort has graduated and two have withdrawn from the program. Rather than putting the entire burden on the graduate director, the new strategy will focus on encouraging the students to form their own support group along with enforcing the requirement of every semester committee meetings for students enrolled in CR 500. This will distribute the effort of maintaining connection to these students to all faculty mentors.

Enter Table I Closing the Loop Comments Below

It will take several years to determine if this is an effective strategy. We currently still have a large cohort of stalled students (6) whose primary faculty mentor has left CSU – Pueblo. While these students continue in the program, progress is slow, so there will be a lag until we see results. Both of the students who dropped out of the program were from the cohort of students whose faculty mentor left the university.

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Table II Annual assessment of Student Learning Outcomes (SLOs) in AY 2024-25

1. Include information to share assessment processes, results, and recommendations for improved student learning. Copy this table for each assessed outcome.

A. Program SLO assessed in this cycle. Copy the SLOs verbatim from the assessment plan.
This table will address all 5 SLOs to avoid repetition as the methods, goals, and results are the same for all SLO 1: Mastery of the Scientific Method – Independent development and mastery of problem solving skills including experimental design, execution, critical analysis, and interpretation of the results of original scientific experimentation (thesis) or experiential learning (internship). SLO 2: Dissemination of Scientific Products – Persuasive communication and defense of significant results of original scientific investigation presented in both written and oral format at a graduate peer-professional level. SLO 3: Utilization of the Literature - Critical evaluation of an independently accessed comprehensive body of scientific literature which is project relevant and foundational in supporting and explaining research findings in both written and oral format. SLO 4: Development of a Relevant Knowledge Base - Development of intrinsically held fundamental field-specific knowledge which will be applied to explain and defend research findings at a level of mastery expected by peer-professionals. SLO 5: Professionalism and Self Responsibility – Maintain a consistent professional work ethic of independently taking the initiative and motivation to produce tangible products of a quality commensurate with peer-standards in graduate or professional schools or in the career field being pursued.
B. Semester and year this SLO was previously reported on before this cycle.
Spring 25
C. Describe the assessment method for this SLO.
Rubric administered during thesis defense and at committee meetings. (Appendix 1)
D. Described student group(s) assessed. Provide the number of students or number of artifacts assessed.
We assessed students active in the program in the last five years. 53 of 57 (93%) students were assessed at least once and 100% of 22 graduates were assessed at their thesis defense. 116 total committee meetings were evaluated and 22 defenses

E. Explain the expected proficiency level and proportion of students who should reach this level.
It is expected that 100% of students are at least proficient in all 5 SLOs by thesis defense (i.e. average score is ≥ 3, where 1=ineffective, 2=developmental, 3=proficient, 4=excellent. See assessment plan for scoring details)
F. Provide Assessment results and number of students who met defined proficiency level.
We saw an increasing trend in performance as students moved through the program (see figure 1 following table). 100% (26 of 26) of students were scored proficient or better in all 5 SLOs at their thesis defense.
G. Describe what results indicate about student performance.
By graduation students are performing at the expected level. Prior to graduation, some students are still developing skills.
H. Describe program level changes/improvements planned for next AY (2026-2027?) which are informed by this assessment.
No changes to the program at this time. We are meeting programmatic goals.

A. Program SLO assessed in this cycle. Copy the SLOs verbatim from the assessment plan.
Time to graduation
B. Semester and year this SLO was reported on prior to this cycle.
Spring 25
C. Describe the assessment method for this SLO.
Length of time from the start of the program to successful defense
D. Described student group(s) assessed. Provide the number of students or number of artifacts assessed.
All graduated students in the last 5 years (N = 22)
E. Expected proficiency level and proportion of students who should reach this level.
80% of students graduate in 3 years or less.
F. Assessment results and number of students who met proficiency level.
55% of graduates in the program finished in 3 years or less. 18% of students took over 5 years to graduate.
G. Describe what results indicate about student performance.
This reflects similar numbers to last year. Of the two students who graduated the program in this year, one took more than 3 years to graduate, meaning that there was little change in this metric from the previous year. Many students take longer to graduate than is preferable, both for students and faculty. The limiting factors that slows graduation is thesis writing.

H. Describe program level changes/improvements planned for next AY (2026-2027?) which are informed by this assessment.
We will switch to enforced committee meetings every semester as that is a more sustainable practice. It is likely to take several years for strong effects to be seen because we have a cohort of students that have already over 3 years that have yet to graduate.

A. Program SLO assessed in this cycle. Copy the SLOs verbatim from the assessment plan.
Program completion
B. Semester and year this SLO was reported on prior to this cycle.
Spring 25
C. Describe the assessment method for this SLO.
Proportion of students failing to complete the program.
D. Described student group(s) assessed. Provide the number of students or number of artifacts assessed.
All students who have dropped out of the program in the last 5 years (N = 13)
E. Expected proficiency level and proportion of students who should reach this level.
Less than 20% of students who leave the program do so having completed all work except for their thesis.
F. Assessment results and number of students who met proficiency level.
69% (9/13) of students who left the program completed all work except for their thesis. The remaining students left the program for other reasons (e.g. admission to desired professional school, family obligations, under performance in coursework, mentor conflict).
G. Describe what results indicate about student performance.
This represents an increase from last year (62%) in students leaving the program having completed all work except for their thesis. Two students whose faculty mentors left the university left the program this year. Faculty turnover is a substantial challenge for students trying to complete their theses.
H. Describe program level changes/improvements planned for AY 2025-2025 informed by this assessment.
We will continue the thesis writing support piloted in the previous year. We may see this number decrease rapidly if we can prevent students from giving up on finishing their thesis.

Enter Table II AY 2025 Assessment Comments Below
This is our fifth year using our new rubric to evaluate all 5 SLO's at every committee meeting in addition to the thesis defense. For all 5 SLO's there is a general upward trend

as students progress through the program (Fig 1). All 20 of our graduating students in the last 5 years performed at the proficient level or above for all 5 SLO's at their thesis defenses. Based on the criteria set forward by our assessment plan, we are meeting our programmatic goals at this time.

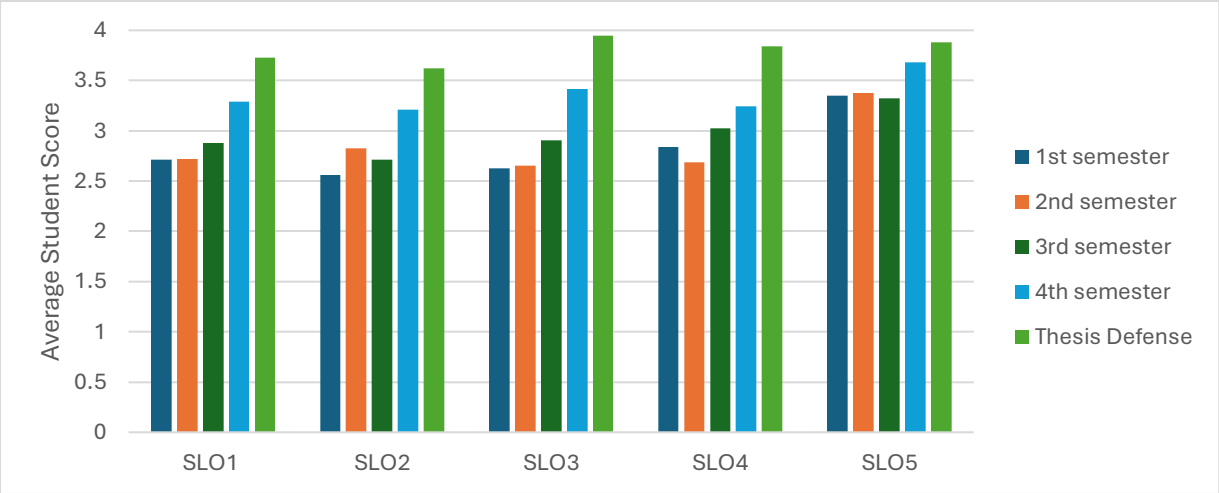

Figure 1: Progress on SLOs through the program as measured in enrolled students over the last 5 years. 1=ineffective, 2=developmental, 3=proficient, 4=excellent

The department feels that our SLOs are important and relevant to the degree and the field and that our expectations are rigorous (100% of students reaching proficiency or mastery by graduation). The department feels that increasing our expectations (to 100% mastery?) is not reasonable as all people have strengths and weaknesses and to expect mastery of all aspects is not realistic. Therefore no work on SLOs 1-5 is planned at this time.

The department has identified two other metrics relevant to student success, time to graduation and reason for failing to complete the program. Both of these hinge on successful thesis writing, which many students struggle with. The thesis writing support group to address these issues proved unsustainable so the department will now inforce the requirement of committee meetings every semester for students enrolled in CR 500. This will distribute the work of mentoring these students more evenly among the faculty. Since we consider 5 years of data in every assessment, it may be several years until the impacts of these policies of observable.