Program Assessment Report

Academic Year(s) Assessed: 2023-2024 (and Fall '24)

College: Agriculture

Department: Land Resources and Environmental Sciences

Department Head: Robert K. D. Peterson

Submitted by: Bob Peterson

Program(s) Assessed

List all majors (including each option), minors, and certificates that are included in this assessment – add or subtract rows as needed – please use official titles:

Majors	Minors, Options, etc.
	Entomology

1. Past Assessment Summary.

This represents an abbreviated and first report because we did not get AOC feedback and approval on the Year 0 planning request until Spring '24. Therefore, there is no Fall '23 assessment. In lieu of that, we are including an assessment from Fall '24. We will submit a full report next year, October 15, 2025, that represents 2024-2025, but we have provided at least a sketch of what we have been working on regarding program assessment.

2. Action Research Question.

How do we, as a cross-department, cross-college program, evaluate the program learning outcomes for the entomology minor when no instructors, administrators, or staff know how many students consider themselves minors in entomology?

3. Assessment Plan, Schedule, and Data Sources.

We did not receive the necessary data for BIOO 262 by December 31, 2024. The professor, Dr. Kevin O'Neill, retired on that date. Also, BIOO 262 is taken by most minors well before they declare their minor. It's not clear to us whether BIOO 262 should be used for the program assessment. The course will be taught Fall '25 by an NTT instructor. Data were provided from BIOO 465 for Spring '24 for Program Learning Outcomes 1-3, but only for the minor students' course grades. Data were provided from AGSC 401 for Fall '24 for PLO 3. The data were for the final term paper, which directly measures "Access, read, and critically assess the quality and source of entomological information." Data were provided from BIOO/ENSC/ANRS 490 for Spring and Fall '24 for PLO 3.

4. What Was Done.

a) Self-reporting Metric (required answer): Was the completed assessment consistent with the program's assessment plan? If not, please explain the adjustments that were made.

☒ Yes ☐ No

5. What Was Learned.

a) Based on the analysis of the data, and compared to the threshold values established, what was learned from the assessment?

PROGRAM LEARNING OUTCOME	2023-2024	2024-2025	Data Source
1. Describe the core theoretical principles and applications in entomology.	S	F, S	Embedded exam questions, BIOO 262 (no data), BIOO 465 (4 known minors: 2 scored 4, 1 scored 3, 1 scored 2; **Avg. score = 3.25**)
2. Identify all major insect orders and ecologically/agriculturally important families by sight and by using diagnostic keys.	S	F, S	Lab quizzes and exams, BIOO 262 (no data), BIOO 465 (4 known minors: 2 scored 4, 1 scored 3, 1 scored 2; **Avg. score = 3.25**)
3. Access, read, and critically assess the quality and source of entomological information.	F, S	F, S	Embedded with assignments in BIOO 262 (no data), BIOO 465 (4 known minors: 2 scored 4, 1 scored 3, 1 scored 2; **Avg. score = 3.25**), AGSC 401 (3 known minor students, term papers, all 3 scored 4; **Avg. score = 4**), and the research project (BIOO/ENSC/ANRS 490) (2 minor students, proposal and final undergraduate minor research paper, both scored 4; **Avg. score 4**)
4. Describe the theory and practice of experimentation and data analysis in entomology, including statistical analysis, model building, and graphical presentation of data.			BIOO/ENSC/ANRS 490 Project
5. Effectively write and present scientific material.			Embedded in assignments in AGSC 401

			BIOO/ENSC/ANRS 490 Project
6. Describe the ethical implications of conducting and applying entomology.			Embedded in exercises in AGSC 401, BIOO 262

Threshold Values		
PROGRAM LEARNING OUTCOME	Threshold Value	Data Source
We have established rubrics for each of the learning outcomes that can be ranked from 1 (low) to 4 (high).	The threshold value for this outcome is for 80% of assessed students to score above 1 in a 200-level course, and 80% of the students scoring above 3 in a 400-level course.	The data source varies with the course being used for the assessment, but includes a random selection of papers, presentations, and embedded questions.

Results: There were 4 assessed students for PLO 1 and 2. Three of the 4 students (75%) scored above 3. There were 9 assessed students for PLO 3. Eight of the 9 students (89%) scored above 3.

b) What areas of strength in the program were identified from this assessment process?

Based on the low sample number and limited information, it seems we are meeting the threshold values for PLO 1-3.

c) What areas were identified that either need improvement or could be improved in a different way from this assessment process?

Clearly, MSU needs to solve the fact that minor students often don't declare their minors until very late in their undergraduate programs. Therefore, it is extremely difficult to track these students, and assessing them after the fact by tracking them back in time and aligning them with PLOs would be excessively time consuming. We need to determine if BIOO 262 can be used in our assessment. Although all minors must take BIOO 262, most who take the course do so well before they declare their minor. For the other courses, we will provide instructors with better direction, including the need to specify the instruments used to assess the PLOs (e.g., which exam questions, quizzes, and papers address which PLO).

6. How We Responded.

The cross-college faculty in entomology are continuing to meet to better understand how to coordinate and report on entomology minor students, many of whom do not declare their minor until their third or second to last semester.

7. Closing the Loop(s). Reflect on the program learning outcomes, how they were assessed in the previous cycle (refer to #1 of the report), and what was learned in this cycle. What action will be taken to improve student learning objectives going forward?

a) Self-Reporting Metric (required answer): Based on the findings and/or faculty input, will there any curricular or assessment changes (such as plans for measurable improvements, or realignment of learning outcomes)?

☒ Yes ☐ No

Have you seen a change in student learning based on other program adjustments made in the past? Please describe the adjustments made and subsequent changes in student learning.

We will report on this as we conduct the second assessment and compare it to the first.

Submit report to programassessment@montana.edu
Update Department program assessment report website.
Update PLO language in CIM if needed (Map PLOs to Course LOs)