General Education Course Assessment Reporting Template
College of Arts and Sciences
University of New Mexico

Academic Year of Assessment: 2014-2015
Submission Date: April 8, 2016
Institution Course Number: BIOL 110/112L
HED Area: 3
Submitted by: [Name omitted]

Introduction: The following template provides the guidelines for reporting the assessment of student learning outcomes for general education courses in the College of Arts and Sciences at UNM.

Instructions: Fill in the sections below for each general education course on which you are reporting assessment efforts. Please send your final report(s) including relevant evidence at the end of the Fall and/or Spring Semester.

A. Please describe any changes to your assessment process made during this assessment period. If there were no changes, say no changes were made.

As described in section F, we added additional questions to get a more nuanced measure of how students were progressing towards specific SLOs.

B. Please describe any curricular changes implemented during the previous assessment period (include relevant evidence of improvement(s) made such as revised syllabus, additional or revised activities, etc. in Appendix 1):

In response to previously low results for SLO 3, we added additional coverage in the course giving students hands on practice in analyzing data and constructing/interpreting graphs (refer to the highlighted section(s) in updated syllabus in Appendix 1).

C. Description of Assessment Instrument(s) and Procedures:
Provide a summary that addresses the following questions: 1) What assessment measures were used in the course? 2) What was the process for assessing student learning in the course? 3) Who collects/reviews the assessment results? 4) What is the expected criteria for success or performance benchmark for successfully meeting the SLO? (include examples of rubrics or assessment instruments in Appendix 2).

In 2015, SLOs for BIOL 110 were assessed with a set of standardized questions. These questions measured student progress toward specific SLOs, and are provided as an appendix to this report. The questions were administered in five tests containing 40 multiple-choice questions each. These tests were administered online in Learn periodically during the semester. Students had 80

minutes to complete each test, and tests were administered online, in an un-proctored, open-book, open-note environment (refer to Appendix 2 for a blank copy of the test).

In 2015, SLOs for BIOL 112L were assessed with one individually written assignment, and with a set of questions administered on their comprehensive final exam. These assignments measured student progress toward specific SLOs, and were based on experiments and lab activities that the students conducted throughout the course of the semester (refer to Appendix 2 for a copy of the guidelines/rubric for the written assignment and a blank copy of the exam).

D. Report of Assessment Data and Results:
Provide a summary of the assessment results, including the sampling procedure used to obtain the results. Then complete the table below (a link to SLOs and the aligned NM HED area(s) and competencies and UNM Learning Goals for your course may be found at http://artsci.unm.edu/assessment/gened-assessment.html).

The data collected during Spring 2015 for BIOL 110/112L are presented below. All students taking 110 and the accompanying lab (112L) were tested via the processes described in C. For examples of questions aligned with specific SLOs, please see Appendix 2.

SLO (list complete SLOs, not just a number)	NM HED Area & Competency #/UNM Learning Goal	Percent of students that met or exceeded expectations
1. By the end of the course, students will be able to explain the nature and process of science.	III: 1, 5 / S	88%
2. By the end of the course, students will be able to use the logic of scientific discovery to critically evaluate scientific information and to develop a testable hypothesis to explain phenomena of the natural world.	III: 1, 5 / K, S, R	79%
3. By the end of the course, students will be able to analyze data, construct and interpret graphs.	III: 4 / S	80%
4. By the end of the course, students will be able to identify macromolecules of life and explain how their structures relate to their functions in cells.	III: 3 / K, S, R	74%
5. By the end of the course, students will be able to describe how cellular structures and functions are related.	III: 2, 3 / S	77.5%
6. By the end of the course, students will be able to explain energy transformation pathways in autotrophs and heterotrophs.	III: 3 / S	83.5%
7. By the end of the course, students will be able to	III: 3 / S	88%

explain the basic mechanisms of inheritance from the molecular to organismal level.		
8. By the end of the course, students will be able to define biological evolution by natural selection and explain microevolution and macroevolution.	III: 3 / K, S	75%
9. By the end of the course, students will be able to explain the basic principles of ecology at the population, community and ecosystem levels.	III: 3, 5 / K, S, R	80%

E. Analysis and Interpretation/Reflection on Results or Trends:
Provide an analysis of assessment results by discussing strengths and/or weaknesses in students' performance/learning. Include relevant evidence such as meeting minutes demonstrating sharing and discussion of results in Appendix 3.

Student progress toward learning outcomes seems to be at or above expectations for most SLOs. Students did the best at SLOs 1 and 7, indicating that we are doing well teaching those topics and that they may also be more accessible to students. The results of this assessment also suggest that SLOs 4, 5, and 8 need more attention. They address some of the more challenging concepts in these courses, and we will address these topics more carefully in 2015-2016 (refer to meeting minutes for a Spring 2016 data workshop in Appendix 3).

F. Plan for Improving the Assessment Process and/or Student Learning:
Provide a summary for improving the assessment process, curriculum, student learning, etc. for implementation during the next assessment cycle.

In 2015, we made improvements to the assessment procedure for BIOL 110 by including a greater number of questions, in order to measure progress towards each SLO with more than one question. We also made improvements to the assessment procedure for BIOL 112L, by adding a standard set of questions to the end of semester in-class final lab practical exam exam (refer to the highlighted questions in updated blank copy of exam in Appendix 4). We found that these improvements were successful and feel that our current assessment procedure is working well.

To improve student learning, we plan to continue our ongoing effort to present topics in an active learning format. In the BIO 110 online course, active engagement of students is particularly challenging. I plan to improve in this area by adding self-checks and multi-attempt practice quizzes into each module. In the lab course, we have been increasing the use of the scientific method in laboratory exercises. Our goal is to have every lab include an experiment to actively engage the students in the process of scientific inquiry as they explore each new set of concepts. We are continuing our ongoing plan to redesign lab exercises until they all have experimental components.

Appendix 1 – Evidence of curricular changes

Not included for this sample report.

Appendix 2 – Assessment instruments

Not included for this sample report.

Appendix 3 – Evidence of aggregated data and/or faculty discussions (e.g. meeting minutes)

Not included for this sample report.

Appendix 4 – Evidence of improvement(s) to be implemented

Not included for the sample report.