



UNIVERSITY OF ARKANSAS
PULASKI TECH

Course-Level Assessment Report
Course: Non-Majors Biology (lab)

BIOL 1100

Academic Year: 2020-2021

Due to Chair/Program Director and Faculty Assessment Chair by
September 4



1. Name of course: Non-Majors Biology Lab
2. Name of individual(s) compiling report: Paula Miles
3. Date of submission: September 14
4. Academic year: 2020-2021

Course-Level Learning Outcomes

1. What are the Course-Level Outcomes (CLOs)?

Course Learning Outcomes: BIOL 1100 (lab)

1. Define the levels of the organization and related functions of bacteria, plants, and animals
2. Describe the characteristics and basic needs of living organisms
3. Analyze the processes of growth and inheritance in individuals and populations.
4. Test a hypothesis that is formulated from observations
5. Use of the microscope and other lab equipment

2. Which CLOs were addressed for the academic year?

CLO #3 - Analyze the processes of growth and inheritance in individuals and populations.

3. Which CLOs are being addressed in your assessment plan in the upcoming academic year?

CLO # 3 - Analyze the processes of growth and inheritance in individuals and populations.

CLO # 5 – Use of the microscope and other lab equipment.

4. Explain the assessment cycle.

Standardized assessments for CLOs 3 and 5 will be conducted for Fall 2021 and Spring 2022 and then every other year.

Standardized assessments for CLOs 1, 2 and 4 will be conducted every other year (next time will be Fall 2022 and Spring 2023).

5. What are the assessment methods? Are they direct or indirect?

CLO #3 - Analyze the processes of growth and inheritance in individuals and populations. Indirect. There were 10 common multiple-choice questions, embedded in an exam, given to every student over cell division (mitosis and meiosis) online. All labs are online, so we can analyze the data from an Item Analysis. These questions will be testing their knowledge and understanding of cell division (mitosis and meiosis).

6. What are the assessment goal(s), including benchmarks?

Our target is a grade of 70% or better on the standardized test over mitosis and meiosis.

7. What were the findings for the academic year?

We received data on the exam questions (10) on cell division from 84 students in 5 sections of **BIOL 1100 in Fall 2020** who took the exam, out of 105 total students. Looking at each question separately, all questions were answered at an average over 70% except two individual questions. The section averages ranged from 53.0 to 96.6%. The average overall for the entire 10 questions was 83%. This exceeded our target of 70% combined success over the entire 10 questions. The lower grades for the 2 individual questions will be addressed later.

We received data on the exam questions (10) on cell division from 129 students in 7 sections of **BIOL 1100 in Spring 2021** who took the exam out of a total of 148 students. Looking at each question separately, all questions were answered at an average over 70% except 1 question. The section averages ranged from 63.1 to 97.7%. The average overall for the entire 10 questions was 85.7%. This exceeded our target of 70% combined success over the entire 10 questions. The lower grades for the 1 individual question will be addressed later.

8. What is your analysis of the findings?

We exceeded our target of 70% overall success in the assessment for both semesters, so the evidence shows that students are successfully learning biological concepts in BIOL 1100 for non-majors lab. There were a few problem questions in the mitosis/meiosis where students went below the 70% threshold, while the combined 10 question

average was well above 70%. These particular questions need to be examined to see if there is a problem with the questions or if we need to emphasize this content more.

Note: these same 10 questions over mitosis and meiosis are used in both the 1300 class and the 1100 lab. Most of the students are taking both, not just one or the other. The students get the 10 questions on an exam in the 1300 class earlier in the semester than the students in lab. They are studying the same process at the same time but tested over it at different times, which was thought to perhaps yield different results. However, the individual questions missed during the exam in 1300 were the same as the individual questions missed during the later exam (Final) in lab.

The COVID 19 pandemic began in March 2020, and the campus closed as all learning pivoted online, with instructors and students working from home. We continue to be in a precarious situation as far as campus presence, however, these 1100 labs have always been online.

9. What is the action plan for the upcoming academic year?

Explain.

CLO # 3 - Analyze the processes of growth and inheritance in individuals and populations.

CLO # 5 – Use of the microscope and other lab equipment.

We will continue to assess cell division in Fall 2021 and Spring 2022, looking at CLO 3 in more detail. We will review ways to cover the material on the problem questions for the cell division assessment or rewrite the questions if needed.

We will use 10 common questions on the microscope to assess CLO 5 for Fall 2021 and Spring 2022.