LBHC Program learning outcome report (2023-24)

1. **General information**

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| **Degree or certificate name** | Associates of Science (Natural Sciences) |
| **Degree option names** | Natural Resources / Environmental Science |
| **Date report submitted** | July 17, 2024 |
| **Program faculty who contributed to this report** | Sara Plaggemeyer |
| **Program learning outcome** (refer to your program learning outcomes curriculum map and plan for the PLO to be formally assessed this year) | Apply environmental/biological science terminology that are a foundation for understanding of the process found in the biological world. |
| **Course that formally assesses this program learning outcome at its highest level** (see program learning outcome curriculum map and plan) | SC 242/243 Natural Resources/Environmental Science/Natural Resources/Environmental Science Lab (co-listed with AG 242/243) |
| **Number of students assessed for this program learning outcome** | 5 |
| **Semester students were assessed** (e.g., fall 2023) | Spring 2023 and Spring 2024 |

2023.02.04

1. **Assessment of indicators for the program learning outcome** (add more rows if necessary)

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| **Break down your program learning outcome into indicators** (maybe taken from rubric): Students should be able to… | List the most significant **teaching and learning activities** used by faculty to facilitate the learning of each PLO indicator in their class(es) | List the **graded assignment(s) that formally assesses** each indicator at its highest level | **Results of assessment:** For each indicator, record the % or # of students who performed below, at, or above expected levels | **Overall, how well did the students perform on each indicator?**  |
| Apply ecological terminology (population growth) to understanding the processes found in the biological world | Utilizing data from case studies, interpreting graphs, videos, in class activity handout | Population Regulation in the Serengeti | Below expected levels: 0 At expected levels: 0 Above expected levels: 4 | Below expected levels At expected levels Above expected levels X |
| Apply ecological terminology (niche) to understanding the processes found in the biological world | Videos of data collection of a case study, computer assignment- questions on videos related to niche portioning and utilization of DNA sequencing analysis. | Niche partitioning and species coexistence | Below expected levels: At expected levels: 1 Above expected levels: 3 | Below expected levels At expected levels Above expected levels X |
| Apply ecological terminology (Ecologic research project design) to understanding the processes found in the biological world | Videos of 4 research project examples, computer assignment- discussion on research project design of each example | Sampling Gorongosa | Below expected levels: At expected levels: Above expected levels: 5 | Below expected levels At expected levels Above expected levels X |
| Apply ecological terminology (data interpretation) to understanding the processes found in the biological world | Scientific articles, research data, interpretation handout | Lab: Is your salt marsh in the zone and the case of the collapsing soil | Below expected levels: At expected levels: Above expected levels: 4 | Below expected levels At expected levels Above expected levels X |
| Define ecological terminology | Lecture, course textbook, online terminology quiz | Population Quiz Part 1 and Part 2 | Part 1Below expected levels: 1 At expected levels: 2 Above expected levels: 1 Part 2Below expected levels:At expected levels: 2 Above expected levels: 2 | Part 1Below expected levels: At expected levels: X Above expected levels: Part 2Below expected levels:At expected levels: x Above expected levels: |

1. **Overall assessment of this program learning outcome** (please be thorough in all responses)

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| **Overall, how well did the students perform on this PLO?** (insert an “X” before the appropriate statement) | Below expected levels At expected levelsAbove expected levels X |
| **Analyze assessment of PLO indicator results in section II:** What does the information in section II suggest to you about the performance expectations, the teaching strategies, and student learning? | Students’ performance on the assignments exceeded expectations, During the 2 semesters evaluated, the number of assignments utilizing case studies that resulted in critical thinking approaches to understanding ecological terminology in this course in had increased drastically. This change focused the course assessments from traditional test and quiz format to active learning styled assignments in which students had to apply the terms to explain different real-world examples of ecological studies. The assignments evaluated focused on several ecological terms, but this needs to be increased to cover a larger number of terms. |
| **Next steps:** Plans for reinforcing effective teaching and learning strategies and for improving student learning (clearly identify what will be done, by whom, by when, and how you will assess the impact of the changes) | Plans for reinforcing effective techniques and learning strategies in this course are to increase the number of assignments that involve real-world examples of ecological research. Expand students’ experience from examples of ecological studies to the students own ecological studies. |
| **Projected semester of****implementing “next steps”** | Spring 2025 |
| **Results of “next steps” implementation on student learning – this section is to be completed the following year** (describe how the implementation of the above “next steps” impacted student learning in the program) |  |
| **Date “results of ‘next steps’ implementation” section above submitted** |  |
| **Suggestions** for improving this report or process (if any) |  |