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** | 7/17/ 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) | Analyze and formulate possible solutions to complex problems associated with environmental/biological studies and research. |
| **Course that formally assesses this program learning outcome at its highest level** (see program learning outcome curriculum map and plan) | SC 236 Current Topics of Biology |
| **Number of students assessed for this program learning outcome** | 7 |
| **Semester students were assessed** (e.g., fall 2023) | Fall 2022, Spring 2023, Fall 2023, 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 (or enter whatever information makes sense to you) | **Overall, how well did the students perform on each indicator?** |
| Analyze complex problems associated with environmental/ biological studies (biodiversity, species distribution, climate change) | Videos of researchers’ lectures, discussion, response paper outline (with questions student needs to address about the research presented in the video) | Species on the move | Below expected levels: 0 At expected levels: 1 Above expected levels: 6 | Below expected levels At expected levels Above expected levels X |
| Analyze complex problems associated with environmental/ biological studies (Climate change and niches) | Videos on northern ocean changes due to climate change, discussion, response paper outline (with questions student needs to address about the research presented in the video- and a prediction of future species distribution) | Northern Oceans | Below expected levels: 1 At expected levels: 0 Above expected levels: 1 | Below expected levels X At expected levels Above expected levels |
| Analyze complex problems associated with environmental/ biological studies (environmental carbon/ climate change) | Videos on carbon sequestration and ecological impacts, Videos of a projects addressing carbon impacts, (with questions student needs to address about the research presented in the videos and an analysis of success of the projects) | Methods for Carbon Sequestration | Below expected levels: 1 At expected levels: Above expected levels: 5 | Below expected levels At expected levels Above expected levels X |
| Analyze complex problems associated with environmental/ biological studies (species conservation, population growth and climate change | Video, discussion, (with questions student needs to address about the topic presented in the videos and apply knowledge about populations from SC 132 and SC 242) | Climate change and polar bear management | Below expected levels: 0 At expected levels: 0 Above expected levels: 3 | Below expected levels At expected levels Above expected levels X |

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 levels  Above 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? | The format of this course is to first look at ecological issues related to climate change, then have students evaluate the information utilizing knowledge from previously taken courses, and to submit their analysis in the form of a response paper. The varying number of students evaluated on assignments is due to students not completing assignments (not starting them either). A trend in not completing assignments is that less assignments were completed as the semester went on. Some assignments were newer than others, so some of the assignments also included more students being evaluated. Students were also more successful if there were more questions asked to be included in the response paper. Of the PLO addressed in this report, only the analyze portion was measurable in the assignments, a component needs to be added to at least some of the assignments to address the formulate solutions to the environmental issues. |
| **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 improving student learning will be to re-evaluate the directions for each assignment to help guide students in later assignments, increase the assignments to one a week rather than some being 2 weeks long- focus on adding assignments in which the students find the topic, research, and videos for the last part of the semester. Adjust assignments to ask students to formulate solutions to the issues. Assessment of the success of these changes will be on if the response papers have more reflection on formulating solutions, increase in students completing later assignments, comparing the difference in student participation in the assignments presently in the course and the assignments that will focus on student driven inquiries into assignments |
| **Projected semester of**  **implementing “next steps”** | Fall 2024 |
| **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) |  |

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| **Date “results of ‘next steps’ implementation” section above submitted** |  |
| **Suggestions** for improving this report or process (if any) |  |