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### Occupational Endorsement Certificate (OEC) Marine Mammal Biology

# Academic Assessment Plan

**Adopted by**

**Biological Sciences faculty, January 15, 2021**

Reviewed with curriculum by the Academic Assessment Committee: 3/5/21

Reviewed by the Faculty Senate as an information item: 3/5/21

## Mission Statement

The mission of the Occupational Endorsement Certificate in Marine Mammal Biology is to deliver high-quality instruction to students in the specialized fields of Biology, Ecology and Conservation of marine mammals that could enter the local workforce as technicians, biologists, and marine mammal observers (for fisheries and oil/gas exploration). Students will receive vital education and experiential training required in these workforce sectors, and via their internships will be connected with biological organizations in need of employees, meeting the needs of local employers in the short-term and beyond.

## Program Introduction

Kenai Peninsula College (KPC) is an extended college of the University of Alaska Anchorage (UAA). KPC is accredited through the University of Alaska Anchorage and the Northwest Commission on Colleges and Universities (NWCCU).

For ten years, the Kachemak Bay Campus (KBC) of the Kenai Peninsula College has held a program called Semester by the Bay (SBB) in Homer, Alaska. Each semester, the program brings in 10 to 20 students from Alaska and the United States to take upper-level Biology courses with hands-on, place-based offerings. This program is unique because it offers students high impact learning with an internship that gives them real-world experience collecting data alongside researchers.

In this 16 credit university credential, students will learn about marine mammal biology in a hands-on environment where climate change is being witnessed. This program of study will have classroom biological theory approach with focus on exploring the real-world application of marine mammal behavior, ecology and conservation research. Through internships and seminars, students will work with government and non-profit professionals doing real-time data collection in coastal and marine environments and labs. This unique program will allow students to glimpse what might lie beyond their college education and will undoubtedly help connect theory to practice.

## Program Requirements

Occupational Endorsement Certificate in Marine Mammal Biology: Certificate Requirements (16 credits)

Advanced Marine Skeletal Articulation - BIOL A325 (2 credits)

Marine Mammal Biology - BIOL A430 (3 credits)

Experiential Learning: Marine Mammal Biology - BIOL A432 (2 credits)

Behavioral Ecology of Marine Mammals - BIOL A458 (3 credits)

Experiential Learning: Behavioral Ecology of Marine Mammals - BIOL A459 (2 credits)

Undergraduate Seminar: Semester by the Bay - BIOL A492A (1 credit)

Internship in Biological Sciences - BIOL A495A (3 credits)

## Program Student Learning Outcomes

Students graduating with an Occupational Endorsement Certificate in Marine Mammal Biology will be able to:

1. Describe the biology, ecology and behavior of marine mammals
2. Contribute to long-term marine mammal research projects
3. Critique current issues associated with marine mammals in Alaska
4. Analyze and demonstrate common field and lab skills used by marine mammal biologists

## Assessment Tools

| **Tool** | **SLO** | **Frequency** | **Collection Method** | **Administered by** |
| --- | --- | --- | --- | --- |
| **Entrance Essay/Artifact** | 1 & 3 | Annual upon inception | Application Process | Program Director |
| **Presentation/Poster Session** | 2 & 4 | Annual upon inception | BIOL A432/ A459/A492A/A495A | Faculty\* |
| **Course Exam Scores or Individual Assignments or Pre-/Post Quizzes**  | 1 & 3 | Alternating Years  | BIOL A325/ A430/A458 | Faculty\*  |
| **Internship Exit Interview**  | 2 & 4 | Annual upon inception | BIOL A495A | Internship Mentor |
| **End of Program Reflection** | 1 & 3 | Annual upon inception | Exit Requirement BIOL A495A  | Program Director |

\*Conducted & collected by course instructor, delivered to Program Director for tabulation, analysis, & reporting

## **Measurement**

Formative (course level) – For each course, each faculty member will use direct and indirect methods for assessing student learning outcomes.

*Direct Assessment*

Pre-and Post-course quizzes. For each of the seven courses, students will be given an ungraded pre-course quiz to test for general knowledge in each specific area prior to the start of instruction. Questions will be based upon information that an average class completer would know. The same exact quiz will be given at the end of term to see the change in understanding for each course.

Exam scores. Scores from courses with comprehensive final exams will be summarized for each student by course and across all courses.

Individual assignments. Each instructor will determine one assignment that will be indicative of a paired course learning outcome.

Summative (program level)

 *Direct Assessment*

Presentations/Poster session – This OEC is based upon a model that allows the student to combine theoretical concepts and authentic practice through internships and three experiential learning lab and field courses. At the completion of the program, each student is required to: present and defend their internship and ePortfolio to university and community partner agency personnel; at a community event, (1) give oral platform presentations on literature summaries in Marine Mammal Biology (BIOL A430) and/or (alternating years) Behavioral Ecology of Marine Mammals (BIOL A458), and (2) create and defend scientific posters using data collected in Marine Mammal Biology Experiential Learning (BIOL A432) and Behavioral Ecology of Marine Mammals Experiential Learning (BIOL A459) field and/or lab projects. These presentation/poster sessions are open to the public and synthesize all that the students will learn in the program. Student presentations/posters will be evaluated using a rubric (Appendix A) by faculty, their course peers, and voluntary community members at large. At the close out of the program students will receive summarized feedback.

 *Indirect Assessment*

End of program reflection. At the completion of the OEC program, students will complete a metacognitive/reflective assignment that will inform faculty about the usefulness of each course to the larger program.

Exit Interview. Additionally, data from internship agencies which host student interns will be collected as part of each intern’s exit interview final evaluation.

## ASSESSMENT **PROCESS**

The program’s structure provides opportunities to track student development through both formative and summative assessment. To measure the four program student learning outcomes, we will measure progress toward each outcome in each course (formative) as well as mastery of each outcome as a result of an end of program projects and presentations (summative).

**Process**

The application process will include screening applicants for a pre-requisite course such as Principles of Ecology (BIOL A271) or Environmental Science: Systems and Processes (ENVI A211), or may be overridden by Program Director approval via an entrance essay and/or artifact demonstrating knowledge of such material. The exit requirement will consist of an end of program oral reflection survey required of all BIOL A495A students which students will video-capture and submit to the Program Director.

Faculty involvement in both formative and summative assessment is critical. Before the program starts in the fall semester, the faculty (adjuncts, voluntarily) will meet and discuss direct and indirect measures of course and program outcomes. This will be an opportunity for faculty to discuss changes to be implemented from the previous year as well as a chance for faculty to share ideas about quizzes, exams and assignments to be used as part of this assessment. At the completion of the program, near the end of the fall, the Program Director will solicit and compile direct and indirect assessment information from faculty, summarize and share student and internship evaluations, and plan for changes or updates for the following fall. Each faculty member that teaches as a part of this program will be required to submit documentation to the faculty Program Director who will be responsible for reporting.

Most student learning outcomes will be assessed annually upon inception. SLOs 1 & 3 in courses BIOL A325/A430/A458 will be assessed every other year, on a rotating basis, to cover all outcomes in two-year cycle. Both sets of information will be useful in determining future changes to the program.

**Modification of the Assessment Plan**

Assessment Plans will be reviewed periodically by the faculty program coordinator and/or program faculty. If substantive changes are required the plan will be resubmitted through curricular approval processes. Recommended changes will be made that will enhance the program assessment process. Small changes will be tracked throughout and applied to future applications to demonstrate continuous improvement of the program overall.