**Occupational Endorsement Certificate**

Natural Resource Technician

**Academic Assessment Plan**

**Adopted by**

**The Anthropology faculty: Feb 28, 2022**

Reviewed with curriculum changes by the Academic Assessment Committee: 3/18/22

Reviewed by the Faculty Senate as an information item: 4/1/22

# Mission Statement

The mission of the Natural Resource Technician program is to provide Alaskan students with the skills and knowledge necessary for successful employment at the technician level in natural resources through hands-on training and coursework.

# Program Student Learning Outcomes

Students graduating with an OEC in Natural Resource Technician will be able to:

· SLO1: Complete basic techniques in natural resource management

· SLO2: Demonstrate an understanding of concepts and principles in natural resource management

· SLO3: Identify and describe the important physical processes that shape the surface of the earth and produce global patterns.

· SLO4: Demonstrate proficiency in small group communication and collaboration

# Measures

Table 1: Assessment Measures and Learning Outcomes addressed

|  | Complete basic techniques in natural resource management | Demonstrate an understanding of concepts and principles in natural resource management | Identify and describe the important physical processes that shape the surface of the earth and produce global patterns. | Demonstrate proficiency in small group communication and collaboration |
| --- | --- | --- | --- | --- |
| Demonstration of techniques of natural resource management | **x** | **x** | **-** | **-** |
| Field guide of local flora and fauna with accurate identifications | **x** | **x** | **-** | **-** |
| Lesson about natural resource management concept or principle | - | **x** | **-** | **x** |
| Course project | **x** | **x** | **x** | **x** |
| Oral presentation | **-** | **-** | **x** | **x** |

Measure descriptions

* Demonstration of techniques of natural resource management: The student will demonstrate for the instructor a technique/skill utilized in natural resource management. This will take place in AGRI A124: Conservation of Natural Resources and GEOG A111: Earth Systems.
* Field guide to local flora and fauna with accurate identifications: This will be developed during field experiences throughout BIOL A124: Biota of Alaska and evaluated at the end of the course.
* Lesson about natural resource management concept or principle: The student will develop and deliver a lesson about a natural resource concept or principle. This will be carried out in groups of 2 or 3 during AGRI A124: Conservation of Natural Resources.
* Course project: Throughout GEOG A111: Earth Systems, students will carry out a project related to physical properties that shape the natural world. This will be presented via a presentation, final paper, or portfolio at the end of the course.
* Oral presentation: During COMM A235: Small Group Communication, students will work on group projects and discuss communication theory. The ultimate outcome will be a presentation, demonstrating the skills and techniques learned and practiced throughout the course.

# Process

*Course level assessment:* Student assessment will be carried out throughout the program, within each course. The final student assessment will consist of the success throughout the courses, as evaluated by the performance measures. Students will also complete course evaluations, which instructors will use to evaluate the success of the course in maintaining student enthusiasm and interest. The course level assessments will be collected by the faculty of the individual courses.

Table 2: Assessment Measures and Courses in which Administered

|  | BIOL A124: Biota of AK | AGRI A124: Cons Nat Res | COMM A234: Small Group Comm | GEOG A111: Earth Systems |
| --- | --- | --- | --- | --- |
| Demonstration of techniques of natural resource management | **-** | **x** | - | **x** |
| Field guide of local flora and fauna with accurate identifications | **x** | **-** | **-** | **-** |
| Lesson about natural resource management concept or principle | **-** | **x** | **-** | **-** |
| Course project | **x** | **-** | **x** | **x** |
| Oral presentation | **-** | **-** | **x** | **-** |

*Program assessment:* Program assessment will begin in Spring 2023, after the first iteration of the program, and will continue each subsequent year. The program assessment will consist of analyses of student grades within each course, across courses, and throughout the program. Student’s will also complete program evaluations, which the instructors will review annually. The number of students that apply to jobs related to natural resource management at the end of the program will be considered as well. Further, the instructors will write a short synopsis of how their course went, positive aspects and how it could be improved. The program level assessment will be collected and analyzed by the program coordinating faculty member. All instructors will meet within a month of the end of the program to discuss these, the program’s success, and/or possible improvements based on these lines of evidence. Based on these results, individual courses as well as program goals and practices will be modified for the next iteration. Changes may include:

* Individual course design
* Faculty teaching roles
* Student assignments
* Roles of external content experts
* Training facilities

Program faculty will also regularly meet with stakeholders to ensure training up to date with their employment needs. These meetings will occur prior to the beginning of each new implementation. An example meeting schedule is:

* 1 month after program completion Faculty meeting, review outcomes and reflections
* 3 months after program completion Data analysis and UAA OA Report Preparation and Submission
* 3 months prior to next iteration Faculty meet with stakeholders to review needs
* 2 months prior to next iteration Faculty meet to discuss/potentially modify curricula per meeting with stakeholders and outcomes of previous iteration

Program faculty will also review the assessment plan annually, including the type and mode of data collection and analysis. Any suggested changes will be included in a modified assessment plan and submitted to the dean’s office and Office of Academic Affairs.

## Appendix A: Demonstration of techniques of natural resource management

### Measure Description:

Throughout AGRI A124: Conservation of Natural Resources and GEOG A111: Earth Systems, students will learn hard skills to be used in the workforce. At the end of each of these courses, they will demonstrate a technique/skill utilized in natural resource management for the instructor that they learned throughout the course. The demonstration will be based on learned course material and will be graded based on the below criteria:

* Understanding of the technique/skill and purpose for it
* Complexity of the technique/skill
* Accuracy of technique/skill
* Precision of the technique/skill
* Efficiency of time carrying out the technique/skill

Each of these criteria will be graded on a 10-point scale, with 0 being completely inadequate to 10 being exceptional. These scores will then be tabulated into a percentage

* 90-99% Exceptional
* 80-89% Superior
* 70-79% Competent
* 60-69% Improvement Needed
* Less than 60% Inadequate

### Factors that affect the collected data:

Factors that affect the data for this measure include:

* Basic comprehension of the technique/skill
* Proficiency in carrying out the technique/skill
* Comprehension of the assignment
* Student’s time and effort put into the completion of the assignment
* The instructor’s explanation and demonstration of the technique or skill

### How to interpret the data

Results can be compared to the student’s efforts in other aspects of the course to gain insight into general interest and engagement level. They can also be compared to other students’ outcomes, as well as outcomes across the program. This will allow understanding of the student’s interest and comprehension of the course material as compared to this particular measure, as well as compared to the comprehension of other students.

## Appendix B: Field guide of local flora and fauna with accurate identifications

### Measure Description:

Field guide to local flora and fauna with accurate identifications: This will be developed during field experiences throughout BIOL A124: Biota of Alaska and evaluated at the end of the course. Accurate identifications of local flora and fauna is key to natural resource management. Therefore, throughout Biota of Alaska students will gain practice in not only identifying species in the Valdez area but also in understanding what characteristics are important in identifications. They will compile a field guide based on their observations and identifications, highlighting key features used in identification and how the species fits into the ecosystem. The field guide will be evaluated based on the following criteria:

* Completion of the guide
* Accuracy of identifications
* Inclusion and accuracy of species role in the ecosystem
* Accuracy of characteristics used in identification

Each of these criteria will be graded on a 10-point scale, with 0 being completely inadequate to 10 being exceptional. These scores will then be tabulated into a percentage

* 90-99% Exceptional
* 80-89% Superior
* 70-79% Competent
* 60-69% Improvement Needed
* Less than 60% Inadequate

### Factors that affect the data collected:

Factors that affect data collected for this measure include:

* Comprehension of important characteristics for species identification
* Ability to identify flora and fauna
* Comprehension of the assignment
* Student’s time and effort put into the completion of the assignment
* The instructor’s explanation and demonstration of the technique or skill

### How to interpret the data

Results can be interpreted by comparing identifications and characteristics used in the identifications to known field guides. This will show the student’s comprehension of the material as well as their attention to detail. Results will be compared to student’s efforts in other courses and other student’s efforts. This will allow understanding of the student’s interest and comprehension of the course material as compared to this particular measure, as well as compared to the comprehension of other students.

## Appendix C: Lesson about natural resource management concept or principle

### Measure Description:

Lesson about natural resource management concept or principle: The student will develop and deliver a lesson about a natural resource concept or principle. This will be carried out in groups of 2 or 3 during AGRI A124: Conservation of Natural Resources. The groups will choose a concept or principle related to management of natural resources. They will then develop how they want to deliver the content to the class, which may include lecture, activity, or discussion. During class time, the groups will deliver their lesson to the class. The lesson will be evaluated based on the following criteria:

* Conveys a good understanding of the topic
* Clear and understandable explanations of the topic, with images, videos, tables, etc
* Engaging lesson
* Use of multiple resources

Each of these criteria will be graded on a 10-point scale, with 0 being completely inadequate to 10 being exceptional. These scores will then be tabulated into a percentage

* 90-99% Exceptional
* 80-89% Superior
* 70-79% Competent
* 60-69% Improvement Needed
* Less than 60% Inadequate

### Factors that affect the data collected:

Factors that affect the data collected for this measure include:

* Student comprehension of the concept or principle
* Student creativity in delivery method
* Student enthusiasm for and interest in the material
* Comprehension of the assignment
* Student’s time and effort put into the completion of the assignment
* The instructor’s explanation and demonstration of the technique or skill

### How to interpret the data

Results will be compared to student’s efforts in other courses and other student’s efforts. This will allow understanding of the student’s interest and comprehension of the course material as compared to this particular measure, as well as compared to the comprehension of other students.

## Appendix D: Course project

### Measure Description:

Throughout GEOG A111: Earth Systems, students will carry out a project related to physical properties that shape the natural world. This will be presented via a presentation or final paper at the end of the course. The project will be a culmination of skills and concepts learned throughout the course. This can include mapping, GIS, topography, geology knowledge and techniques. Students will have the opportunity to determine in which format they want the project to be. The project will be evaluated based on the following criteria:

* Accuracy of information
* Knowledge of the topic and skill
* Level of detail about the topic and skill
* Use of multiple resources

Each of these criteria will be graded on a 10-point scale, with 0 being completely inadequate to 10 being exceptional. These scores will then be tabulated into a percentage

* 90-99% Exceptional
* 80-89% Superior
* 70-79% Competent
* 60-69% Improvement Needed
* Less than 60% Inadequate

### Factors that affect the data collected:

Factors that affect the data collected for this measure include:

* Student comprehension of the concept or principle
* Student creativity in delivery method
* Student enthusiasm for and interest in the material
* Comprehension of the assignment
* Student’s time and effort put into the completion of the assignment
* The instructor’s explanation and demonstration of the technique or skill

### How to interpret the data

Results will be compared to student’s efforts in other courses and other student’s efforts. This will allow understanding of the student’s interest and comprehension of the course material as compared to this particular measure, as well as compared to the comprehension of other students.

## Appendix E: Oral presentation

### Measure Description:

During COMM A235: Small Group Communication, students will work on group projects and discuss communication theory. The ultimate outcome will be a presentation, demonstrating the skills and techniques learned and practiced throughout the course. The presentation will be evaluated based on the following criteria:

* Accuracy of presentation
* Demonstrated understanding of communication theory and practice
* Accuracy and flow of the discussion
* Efficiency of collaboration

Each of these criteria will be graded on a 10-point scale, with 0 being completely inadequate to 10 being exceptional. These scores will then be tabulated into a percentage

* 90-99% Exceptional
* 80-89% Superior
* 70-79% Competent
* 60-69% Improvement Needed
* Less than 60% Inadequate

### Factors that affect the data collected:

Factors that affect the data collected for this measure include:

* Student comprehension of the concept or principle
* Student creativity in delivery method
* Student enthusiasm for and interest in the material
* Comprehension of the assignment
* Student’s time and effort put into the completion of the assignment
* The instructor’s explanation and demonstration of the technique or skill

### How to interpret the data

Results will be compared to student’s efforts in other courses and other student’s efforts. This will allow understanding of the student’s interest and comprehension of the course material as compared to this particular measure, as well as compared to the comprehension of other students.