

**2022 ANNUAL ACADEMIC ASSESSMENT REPORT FORM**  
**(Due October 15 to the dean)****PROGRAM SECTION (Due to the dean on October 15)****Submission date:** 11/7/2022**Submitted by:** Caixia Wang, Chair of the Geomatics Department, cwang12@alaska.edu**Program(s) covered in this report:** Geomatics BS

If you selected "Other" above, please identify. (100 characters or less)

**College:** College of Engineering**Campuses where the program(s) is delivered:** ☒ Anchorage ☐ KOD ☐ KPC ☐ MSC ☐ PWSC**Specialized accrediting agency (if applicable):** Applied Science Accreditation Commission of ABET**If explanation is necessary, such as only some of the certificates and degrees are covered by the specialized accreditation, briefly describe:****INSTITUTIONAL STUDENT LEARNING CORE COMPETENCIES**

In 2020, UAA launched a consensus-based, deliberative process to identify the key skillsets that help students achieve academic and post-graduation success. After a year-long process that included students, faculty, staff, administrators, alumni, and employers, the UAA community identified four core competencies at the heart of a quality UAA education. Students develop mastery of these competencies through curricular (e.g., courses), co-curricular (e.g., internships, conferences), and extra-curricular (e.g., student clubs) learning experiences.

After the stakeholder-based process in AY20, UAA is phasing in the integration of the core competencies into ongoing processes, including program student learning outcomes assessment. Personal, Professional, and Community Responsibility (PPCR) was integrated into the AY21 Annual Academic Assessment Report. The AY22 Annual Academic Assessment Report now also integrates Effective Communication.

Question #1 below is designed to engage program faculty in thinking about how they can or already do promote student learning in these two core competencies.

1. **A. *Personal, Professional, and Community Responsibility: The knowledge and skills necessary to promote personal flourishing, professional excellence, and community engagement.***

- If last year you provided your program's current or planned example of an intentionally designed course, assignment, or activity that develops and showcases the student learning in this core competency, please discuss that implementation and any observations you have regarding how well it is working. (500 characters or less)
- If last year you *did not* identify a current or planned example of an intentionally designed course, assignment, or activity that provides students the opportunity to develop and showcase this core competency, please identify one now. (500 characters or less)

GEO A457 Boundary Law II

**B. *Effective Communication: The knowledge and skills necessary to engage in effective communication in diverse contexts and formats.***

- What would you hope a student would say if asked where in your program or support service they had the opportunity to develop proficiency in this core competency? (500 characters or less)

GIS A101 Introduction to GIS, GEO A156 Geospatial Measurement I, and courses that require projects to present orally and/or submit technical reports at the end of the semester.

- Provide your program's current or planned example(s) of an intentionally designed course, assignment, or activity that showcases the student learning in this core competency. (500 characters or less)

GEO A460 Geomatics Capstone Project.

## PROGRAM STUDENT LEARNING OUTCOMES

2. Please list the Program Student Learning Outcomes your program assessed in AY22. For each outcome, indicate one of the following: Exceeded faculty expectations, Met faculty expectations, or Did not meet faculty expectations.

***Example: Communicate effectively in a variety of contexts and formats – Exceeded faculty expectations.***

SLO1. An ability to identify, formulate, and solve broadly defined technical or scientific problems by applying knowledge of mathematics and science and/or technical topics to areas relevant to the discipline. The third sub area (general physics) of focus for this outcome is assessed - Met faculty expectations.

SLO2. An ability to formulate or design a system, process, procedure or program to meet desired needs - Met faculty expectations.

SLO3. An ability to develop and conduct experiments or test hypotheses, analyze and interpret data

and use scientific judgment to draw conclusions - Met faculty expectations.

SLO4. An ability to communicate effectively with a range of audiences - Met faculty expectations.

SLO5. An ability to understand ethical and professional responsibilities and the impact of technical and/or scientific solutions in global, economic, environmental, and societal contexts - Met faculty expectations.

SLO6. An ability to function effectively on teams that establish goals, plan tasks, meet deadlines, and analyze risk and uncertainty - Met faculty expectations.

Outcome 7a. An ability to apply knowledge in all six areas of surveying and mapping: Field surveying and methods - Met faculty expectations.

Outcome 7b. An ability to apply knowledge in all six areas of surveying and mapping: Photogrammetric mapping, image interpretation and remote sensing - Met faculty expectations.

Outcome 7e. An ability to apply knowledge in all six areas of surveying and mapping: Cartographic representation, projections, and map production - Met faculty expectations.

Outcome 7f. An ability to apply knowledge in all six areas of surveying and mapping: Computer-based multipurpose cadastre, geographic information systems - Met faculty expectations.

**3. Describe your assessment process in AY22 for these Program Student Learning Outcomes, including the collection of data, analysis of data, and faculty (and other, e.g., advisory board) conversations around the findings. (750 characters or less)**

This year, course-level assessment (CLA) data were collected for Outcomes 1, 2, 3, 4, 5, 6 and program-specific Outcomes 7a, 7b, 7e and 7f. In addition, we gave our senior exit survey to all of this year's graduates, which collects indirect assessment data on every outcome. The overall attainment level is set as 75% for the target level of the program. It is measured from both direct and indirect assessment using 80/20 weight factor.

**4. What are the findings and what do they tell the faculty about student learning in your program? (750 characters or less)**

The attainments for outcomes measured this year are 87% for SLO1, 100% for SLO2, 94% for SLO3, 89% for SLO4, 92% for SLO5, 93% for SLO6, 100% for SLO7a and 7b, 79% for SLO7e, and 100% for SLO7f. They are all above target levels of 75%. CLA data were taken from upper-level homework and exam questions. Both the data and instructors report that students are performing at a satisfactory level in these measured outcomes.

**5. Based on the findings, did the faculty make any recommendations for changes to improve student achievement of the Program Student Learning Outcomes? Please describe the recommended action, what improvement in student learning the program hopes to see with this change, the proposed timeline, and how the program will know if the change has worked. If no recommendations for changes were made, please explain that decision. (750 Characters or less)**

Recommendations to enhance student performance for continuous improvement include strengthening learning by adding more in-class exercises for SLO1, SLO3 and SLO4a, continuing to

emphasizing completing all parts of every question for SLO5, and considering alternative courses to assess outcomes for SLO4b and SLO6. The outcomes will be measured and reported in the next cycle.

#### PROGRAM IMPROVEMENTS AND ASSESSING IMPACT ON STUDENT LEARNING

**6. In the past academic year, how did your program use the results of previous assessment cycles to make changes intended to improve student achievement of the Program Student Learning Outcomes? Please check all that apply.**

- ☐ Course curriculum changes
- ☐ Course prerequisite changes
- ☒ Changes in teaching methods
- ☐ Changes in advising
- ☐ Degree requirement changes
- ☐ Degree course sequencing
- ☐ Course enrollment changes (e.g., course capacity, grading structure [pass/fail, A-F])
- ☐ Changes in program policies/procedures
- ☐ Changes to Program Student Learning Outcomes (PSLOs)
- ☐ College-wide initiatives (e.g., High-Impact Practices)
- ☐ Faculty, staff, student development
- ☐ Other
- ☐ No changes were implemented in AY22.

**If you checked "Other" above, please describe. (100 characters or less)**

**7. Do you have any information about how well these or other past improvements are working? Are they achieving their intended goals? Please include any data or assessment results that help you demonstrate this. (750 characters or less)**

**8. PROGRAMS ARE NOT REQUIRED TO RESPOND TO QUESTION #8 FOR THEIR REPORT DUE ON OCTOBER 15, 2022. IT IS HERE JUST FOR THEIR REFERENCE.**

**9. Do you have any examples of post-graduate success you want to highlight? For example, major scholarships, the percent of students who pass licensure examinations, the percent of students accepted to graduate programs, the percent in post-graduation employment in the field or a related field. (750 characters or less)**

According to the exit survey, 68% reported they have found employment and the rest (32%) indicated they planned for graduate school.

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**DEAN SECTION (Due to the program on January 15)**

- 1. Based on the program's responses above, what guidance and support do you have for the program moving forward? (750 characters or less)**

The program has a robust assessment process that focuses on course-level assessment (CLA). The visiting ABET team commended the process, including the continuous improvement/closing the loop portion. While the ABET team did identify a weakness with respect to curriculum (the GIS track was judged to be missing items required by the National Society of Professional Surveyors), the program was able to resolve this weakness in the 30-Day Due Process Response through a combination of additional documentation and a minor curricular change.

- 2. What is the program doing particularly well in terms of its processes for the assessment and improvement of student learning, for example, the achievement of the Program Student Learning Outcomes, the closing of equity gaps, or addressing the core competencies? (750 characters or less)**

The program is commended for a successful ABET visit in October 2022, and for all the accompanying preparation. The program is further commended for its particularly active Advisory Board, which is indicative of its close relationship with the local community. Finally, the program has been actively addressing its recent low enrollments, including by the adoption of a 2+2 program with the AAS in Surveying at Bellingham Technical College in Washington. Enrollment is up in the lower-div GEO courses this year, so these efforts seem to be paying off.

Dean's signature:



Date: 1/23/2023