



3211 Providence Drive
Anchorage, AK 99508-4614
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2021 ANNUAL ACADEMIC ASSESSMENT REPORT FORM
(Due October 15 to the dean)

PROGRAM SECTION (Due to the dean on October 15)

Submission date: 10/13/2021

Submitted by: Caixia Wang, Associate Professor and Chair, 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 conducted a pilot project focusing on the core competency of Personal, Professional, and Community Responsibility (PPCR). This decision was based on input from the 2020 Annual Academic Assessment Retreat.

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

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



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They would include 1)GEO A457 Boundary Law II, which introduces Alaska Statutes, Code, and case law applicable to the land surveying profession; 2)GEO A460 Geomatics Capstone Project, which actively engages professionals in co-mentoring; 3) Geomatics Student Association (club) involving students to serve as its officers, in networking with professionals and scientists in the field, and in K-12 outreach; 4) attending/volunteering in conferences (e.g., ASMC), and 5) working on research projects.

- **Do you have an example that could be a model for the university of an intentionally designed course, assignment, or activity that showcases the student learning in this core competency?** ☐ Yes ☒ No

If yes, please briefly describe. (500 characters or less)

- **Do you have any ideas about where your program or the university might develop other intentionally designed opportunities for students to develop proficiency in this core competency?** ☐ Yes ☒ No

If yes, please briefly describe. (500 characters or less)

PROGRAM STUDENT LEARNING OUTCOMES

2. **Please list the Program Student Learning Outcomes your program assessed in AY21. 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 - 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.

SLO7c. An ability to apply knowledge in Surveying calculation and data adjustment - Met faculty expectation.

SLO7d. An ability to apply knowledge in Geodetic coordinates and astronomy - Met faculty expectations.

3. **Describe your assessment process in AY21 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, 3, and program-specific Outcomes 7c and 7d. 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.



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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 four outcomes measured this year are 97% for SLO1, 100% for both SLO3 and SLO7c, and 80% for SLO7d. 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)

SLO5 was not assessed via CLA in this cycle. Based on findings from the previous cycle to continue enhancing student performance for SLO5, the instructor of GEO A457 used this cycle to further develop the ethics and standard of professional practice content and added discussions to improve the learning experience. The outcome will be measured and reported in the next cycle for SLO5.

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 AY21.

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



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- 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)**

The program has been conducting course curriculum improvements using assessment findings from previous cycles and constituent input. It works well, as demonstrated by the continuously increased or satisfactory attainment level measured by direct and indirect assessment. And the exit survey in this cycle showed a 100% employment rate at the time students graduate.

- 8. Programs are not required to respond to question #8 below for their report due on October 15, 2021. Question #8 will be required for the next round and moving forward.**

- 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)**

The program graduated its first Master of Science student in May 2021 (committee chaired by the program faculty) through the UAA Interdisciplinary Studies Master's Degree program. The student was also the recipient of the ADAC graduate research fellowship throughout his MS study. He was our own graduate from the BS program. And he has been employed by the Fairbanks North Star Borough after his graduate study.

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? Is there a particular area the program should focus on? (750 characters or less)**

The program has a robust assessment process that focuses on course-level assessment (CLA). The program has collected what appears to be an appropriate level of CLA. We acknowledge the program's decision not to collect data on SLO5 this round but rather to focus on making course improvements with the intent of assessing the efficacy of those improvements in the next cycle. The BS Geo (and the other ABET-accredited programs in CoEng) are due for a regular 6-year evaluation next fall. Program faculty are encouraged to continue this work and to incorporate it into their ABET self-study report.

Evaluation of program educational objectives (PEOs) is not covered in this report but is required by ABET.



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2. Is there something the program is doing particularly well in terms of its processes for the assessment and improvement of student learning, including the closing of equity gaps, that might serve as a model for other programs? If yes, please explain. You may skip this question. (750 characters or less)

The program has a robust process of CLA and a particularly active Advisory Board, which we have used as an example for other programs in CoEng. The program has successfully added an online option to all of its classes during this ABET review cycle.

Dean's signature:

DocuSigned by:
Kennick Mock
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Date: 1/18/2022