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ACADEMIC PROGRAM REVIEW REPORT AY2023-24

Program(s) in the review: AAS/BS Geomatics & OEC Geographic Information Systems

Specialized Accrediting Agency (if applicable): Applied Science Accreditation Commission of ABET

Campuses where the program is delivered: Anchorage KOD KPC MSC PWSC

Year of last review: AY21 (BS), AY20 (AAS)

Final decision from last review: Follow-up Program Review (BS), Temporary Suspension (AAS)

PROGRAM SECTION (Due on March 1)

The program review committee chair and committee members are assigned by the dean. All program faculty should be included in the review process, including faculty on the community campuses. After completing the Program Section below, the program review committee chair will enter their name and date, and email this form to the dean, copying all committee members. If the program is fully delivered on a community campus, copy the appropriate community campus director(s). The program review committee chair's name and date lines are at the end of the Program Section.

Program Review Committee:

Caixia Wang, Associate Professor, Anchorage Campus

- 1. Demonstrate that the program has responded to previous recommendations. Address any guidance in the provost's response to the AY21 Interim Progress Report, posted on the [Academic Program Review website](#).**

Recommendation 1: Temporarily suspend admissions to the AAS.

How do you know the recommendation has been successfully achieved? (2500 characters or less)

Admission to the AAS was suspended for AY21.

Actions taken to date (2500 characters or less)

Following the guidance in the Provost's response to the AY21 Interim Progress Report, a formal request was submitted through the college in the summer of 2021 to lift the suspension of admission status for the AAS program.

Evidence of success to date (2500 characters or less)

Admission to the AAS degree has reopened, effective spring 2022.

Recommendation 2: Remove the tracks within the BS and focus the curriculum on training surveyors. Additionally, the program should work with Civil Engineering to

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integrate CE majors into GEO A156 and stop teaching GEO A155. The revision should be completed in AY21 for implementation in fall 2021.

How do you know the recommendation has been successfully achieved? (2500 characters or less)

The revision of the BS program was conducted and completed during AY21.

Actions taken to date (2500 characters or less)

After consulting with the program's advisory board and the community, the faculty streamlined the BS curriculum and made revisions during AY21. These changes resulted in removing the developer track but retaining the surveying and GIS tracks to meet the industry demands for both surveyors and geospatial professionals. Additionally, the program has reduced the number of credits that need to be taught by the program by 30 compared to AY20.

The CE and GEO faculty jointly reviewed both GEO A155 and A156. They recognized the pivotal role of GEO A155 in laying the foundation for student success, particularly in preparing CE students for their introduction to Civil Engineering course, CE A201. Conversely, GEO A156 was identified as essential for equipping GEO students to excel in higher-level GEO courses. However, faculty addressed this implicit prerequisite for CE students by adding GEO A155 as a prerequisite for CE A201.

These actions received endorsement from the Dean and the Provost in response to the AY21 Interim Progress Report.

Evidence of success to date (2500 characters or less)

The revised program was launched in the fall of 2021, along with the implementation of the updated CE A201, which now requires GEO A155 as a prerequisite. On August 31, 2023, the BS program achieved successful renewal of its ABET accreditation for the next full 6-year cycle.

Recommendation 3: Revise the program so it can be taught with existing faculty positions.

How do you know the recommendation has been successfully achieved? (2500 characters or less)

The number of existing full-time faculty remains unchanged.

Actions taken to date (2500 characters or less)

The faculty revised the program curriculum for both AAS and BS degrees during AY21. Details regarding the revisions to the BS curriculum can be found in the actions outlined for Recommendation 2 above. Specifics regarding the AAS revisions are provided in the actions outlined for Recommendation 4.

Evidence of success to date (2500 characters or less)

The program is delivered by the same faculty resources.

Recommendation 4: Revise the AAS as part of the BS revision. Align lower division core courses to streamline and reduce the number of lower division courses that need to be taught.

How do you know the recommendation has been successfully achieved? (2500 characters or less)

The revision of the AAS was conducted and completed during AY21, as part of the BS revision.

Actions taken to date (2500 characters or less)

In AY21, the faculty included the AAS as part of the revision of the BS program. By streamlining lower-division core courses for both the revised BS and AAS, the program reduced the number of lower-division core courses in the AAS that need to be taught and provides students a cohesive educational pathway from the two-year associate program to the four-year baccalaureate program in Geomatics.

Evidence of success to date (2500 characters or less)

After reinstating admission to the AAS program in Spring 2022, newly admitted AAS students are enrolled under the revised curriculum, seamlessly stacked with the new BS program. And there are no additional costs for instructional resources required to offer the AAS program.

Recommendation 5: Rename the program to better reflect currency and promote visibility and shift specialized accreditor to EAC.

How do you know the recommendation has been successfully achieved? (2500 characters or less)

N/A

Actions taken to date (2500 characters or less)

The program sought input from its advisory board, an ABET Accreditation Coordinator, and NCEES, ultimately deciding not to rename the program due to potential complications. Specifically, transitioning to a new accreditation commission requires meeting the accreditation criteria of a different program.

This action, outlined in the AY21 Interim Progress Report, received support from both the Dean and the Provost in response to the Report.

Evidence of success to date (2500 characters or less)

N/A

Recommendation 6: Increase enrollment and completion rates in the AAS.

How do you know the recommendation has been successfully achieved? (2500 characters or less)

Due to the recent readmission to the AAS program, data for the Graduation Rate is currently unavailable, and the enrollment data is insufficient to draw conclusions. However, since

admissions to the AAS reopened in Spring 2022, there has been a noticeable upward trend in enrollment for FY23 compared to FY22.

Actions taken to date (2500 characters or less)

In Spring 2022, faculty resumed their focused efforts to enhance AAS enrollment and graduation rates following the readmissions to the AAS. These activities have included the BS program as well. Active promotion of the revised AAS and BS program has been ongoing, with faculty collaborating closely with our advisory board and industry professionals to advocate for the program in statewide and national communities, including ASPLS, ASPRS, and AAUG, as well as state/federal agencies, and geospatial business owners. Additionally, outreach to non-traditional students such as military personnel and working professionals has been prioritized. Various venues, including conferences and outreach events like the Program Preview Day, CoEng Student Club Showcase, Journey into Engineering, and GIS Day, are actively utilized by the program to foster broader interest. Mandatory advising continues to be enforced for all AAS and BS students to ensure their academic success. The program allocates administrative scholarships to provide targeted support for retention.

The program has been actively establishing impactful partnerships with agencies and other programs. Notably, it has forged a 2+2 program partnership with the AAS program of Engineering Technology-Geomatics at Bellingham Technical College (BTC) in Washington State. Recently, a transformative collaboration has been established between the Alaska Department of Natural Resources and the program to set up and manage a state-of-the-art Global Navigation Satellite Systems (GNSS) reference station on the UAA campus. This GNSS reference station, part of Alaska's Continuously Operating Reference Network (ACORN), provides real-time positional data, enhancing public access to invaluable location information essential for various applications and bolstering the State's efforts to advance ACORN. Students in the program are offered the opportunity to engage with cutting-edge geospatial education and research, empowering them to excel and emerge as leaders in this dynamic field.

References:

UAA (2022). "UAA partners with Bellingham Technical College on geomatics program."

Department of Natural Resources (2023). "DNR, UAA Partner on Global Navigation Satellite System."

Evidence of success to date (2500 characters or less)

The AAS enrollment data, albeit limited due to its recent readmission, suggests an upward trend approximately one year after readmission. This rise has also had a positive impact on enrollment in the BS program, which saw a 10% increase in FY23 compared to FY22.

- 2. Demonstrate the centrality of the program to the mission, needs, and purposes of the university and the college/community campus. Include how the program is integrating (or planning to integrate) intentionally designed opportunities for students to develop the four core competencies**

(Effective Communication; Creative and Critical Thinking; Intercultural Fluency; and Personal, Professional, & Community Responsibility). (3000 characters or less)

The OEC GIS, AAS and BS in Geomatics are unique programs in the UA system. Many of our graduates come from diverse academic backgrounds or have prior professional experience. By completing their degree from our programs, they are empowered to pursue and secure positions in high-demand fields, and they also become eligible to apply for licensures. Therefore, the three programs in Geomatics directly contribute to UAA's mission of transforming lives through teaching, research, and community engagement in a diverse and inclusive environment.

The four core competencies have been integrated throughout the BS program, with which the OEC GIS and AAS are stacked. Effective Communication is emphasized from the outset, beginning with the GERs in Oral and Written Communications and reaching its pinnacle in the GEO A460 Capstone Project course. Creative and Critical Thinking is woven into nearly every course, essential for solving practical challenges designed in assignments of classes, labs, and projects. Intercultural Fluency is fostered through the Alaska Native-Themed GER. Personal, Professional, & Community Responsibility are thoroughly addressed across various courses, encompassing fields such as general business and professional studies, including BA A241 Business Law I, BA A300 Organizational Theory and Behavior, and PHIL A305 Professional Ethics. Additionally, students gain exposure to responsibilities specific to the geomatics professional field through courses including GIS A101 Introduction to GIS, GEO A267 Boundary Law I, and GEO A457 Boundary Law II.

3. Demonstrate program quality and improvement through assessment and other indicators.

a. Program Student Learning Outcomes Assessment and Improvement Process and Actions

i. BS Geomatics

- *1) 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; 2) Formulate or design a system, process, procedure or program to meet desired needs; 3) Develop and conduct experiments or test hypotheses, analyze and interpret data and use scientific judgment to draw conclusions; 4) Communicate effectively with a range of audiences; 5) Understand ethical and professional responsibilities and the impact of technical and/or scientific solutions in global, economic, environmental, and societal contexts; 6) Function effectively on teams that establish goals, plan tasks, meet deadlines, and analyze risk and uncertainty; 7) Apply knowledge in all six areas of surveying and mapping: a) Field surveying and methods; b) Photogrammetric mapping, image interpretation and remote sensing; c) Surveying calculation and data adjustment; d) Geodetic coordinates and astronomy; e) Cartographic representation, projections, and map production; and f) Computer-based multipurpose cadastre, geographic information systems.*

Describe your key findings for these outcomes. (3500 characters or less)

For each student learning outcome, we measure student performance in several classes (direct measures) along with the Graduate Exit Surveys (indirect measures). In identified courses, student work was collected and assessed on a scale ranging from Unsatisfactory, Developing,

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Satisfactory, to Excellent. The overall attainment for each student learning outcome is calculated using a weighted average, with 80% derived from course-level assessments and 20% from the Graduate Exit Survey measures. These numbers below represent the average percentage of student performance for each student learning outcome from AY2016-2017 through AY 2021-2022.

SLO 1: 93%

SLO 2: 97%

SLO 3: 94%

SLO 4: 90%

SLO 5: 97%

SLO 6: 89%

SLO 7a-f: 96%, 94%, 96%, 86%, 82%, 93%

Our students met or exceeded faculty expectations across all learning outcomes.

Describe actions taken to improve student learning for these outcomes. (3500 characters or less)

We will continue our practice of regularly assessing and evaluating the attainment of student learning outcomes to identify areas in need of improvement.

Describe evidence that these actions are working. (3500 characters or less)

N/A.

ii. AAS Geomatics

- *1) 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; 2) An ability to conduct experiments or test theories, as well as to analyze and interpret data; 3) An ability to function on teams; 4) An understanding of professional and ethical responsibility; and 5) An ability to communicate effectively.*

Describe your key findings for these outcomes. Programs may enter "See above" if there is a significant overlap of outcomes. (3500 characters or less)

See above.

Describe actions taken to improve student learning for these outcomes. Programs may enter "See above" if there is a significant overlap of outcomes. (3500 characters or less)

See above.

Describe evidence that these actions are working. Programs may enter "See above" if there is a significant overlap of outcomes. (3500 characters or less)

See above.

iii. OEC Geographic Information Systems

- *1) Effectively manage databases and visualize results of geospatial analysis; 2) Apply programming skills in order to advance analysis with GIS; and 3) Address planning, decision-making, and operational needs with geospatial skills.*

Describe your key findings for these outcomes. Programs may enter "See above" if there is a significant overlap of outcomes. (3500 characters or less)

We assess all outcomes by distributing a questionnaire to graduating students in their final semester. However, as the OEC in GIS program was recently introduced, there are currently no graduating students. We will closely monitor upcoming graduates and collect data to assess student learning outcomes accordingly.

Describe actions taken to improve student learning for these outcomes. Programs may enter "See above" if there is a significant overlap of outcomes. (3500 characters or less)

N/A

Describe evidence that these actions are working. Programs may enter "See above" if there is a significant overlap of outcomes. (3500 characters or less)

N/A

- b. Demonstrate program quality and improvement through other means, for example, maintaining specialized accreditation, using guidance from advisory boards/councils, responding to community partners and local needs, maintaining currency of the curriculum, implementing innovative program design, intentionally integrating high-impact teaching and learning practices into the program, and meeting indications of quality in distance education, such as the C-RAC Standards. (3500 characters or less)**

Since 1995, the BS Geomatics program has maintained continuous accreditation from the Applied and Natural Science Accreditation Commission, previously known as the Applied Science Accreditation Commission, under ABET. This rigorous accreditation process upholds stringent standards to ensure the program's quality. For example, ABET Criterion 5 stipulates a rigorous and contemporary curriculum, empowering students to succeed in a rapidly evolving technological landscape and dynamic industry demands. Additionally, its program criteria require that the Geomatics curriculum equips students to utilize modern equipment and techniques. Criterion 4 emphasizes the imperative of demonstrating continuous improvement in

student learning outcomes. The most recent campus visit occurred during the fall semester of 2022, resulting in the successful renewal of the program's ABET accreditation. Since the OEC in GIS and AAS are stacked to the BS curriculum, both programs inherently go through the same rigorous review and update to ensure their high quality and relevance.

The Geomatics department boasts an exceptionally active and strong advisory board, comprising representatives from local companies, federal and state agencies, and organizations such as NOAA's National Geodetic Survey, Alaska Dept. of Natural Resources, Alaska Railroad, R&M Consultants, HDL Engineering Consultants, Bureau of Land Management, SurvBase, JOA Surveys, Stantec, DAT/EM Systems International, Kodiak Mapping, and Michael Baker International. An outstanding testimony to the unwavering support of the advisory board is the fundraising initiative spearheaded by its members in the summer of 2019. In under three weeks, this initiative raised over \$150k, laying the groundwork for the establishment of the Excellence in Geomatics foundation fund, dedicated to fostering excellence within the Geomatics department.

The program has been actively establishing strategic partnerships to enhance its visibility and influence. Among these pivotal collaborations are the 2+2 program partnership with BTC, and the GNSS reference station partnership with the Alaska Department of Natural Resources, both described in actions for Recommendation 6 above. Additionally, the program actively promotes undergraduate research, interdisciplinary studies, and other collaborations through research projects funded by the National Science Foundation, U.S. Geological Survey, and National Oceanic and Atmospheric Administration, among others.

4. Demonstrate student success and the closing of equity gaps.

- a. Analyze and respond to the disaggregated data in the data sheet for your program. Provide clarifications or explanations for any positive or negative trends indicated by the data, and discuss what you are doing to close any equity gaps. The Student Success program review metrics are Junior Graduation Rate, Associate Graduation Rate, Semesters to Degree – Graduate Programs, and Course Pass Rates by Course Level. (3500 characters or less)**

From 2019 to 2023, the Course Pass Rates for undergraduate lower divisions showed a notable and generally upward trend, with a minor dip in 2020 where the rate was less than 1% lower than in 2019. Meanwhile, the Course Pass Rates for undergraduate upper divisions displayed some variability but consistently exceeded 87% throughout the five-year span. We are pleased to see these consistently high pass rates across both lower and upper divisions of our undergraduate courses, which we attribute to the continuous enhancement of the program curriculum through regular review and frequent updates.

The Junior Graduation Rates for Baccalaureate do not mirror this upward trend throughout the five-year period. They peaked at 100% in 2021 and declined in both 2022 and 2023. We hesitated to draw any firm conclusions due to several factors: the percentages are calculated from a small number of students, raw numbers were not available from IR for this report, and there is no Junior Graduation Rates data available on Part-Time students in 2023. For the AAS program, there is no sufficient data available on Associate Graduation Rates provided by IR for this report.

- b. Numerous US universities, and a number of programs across UAA, have holistically evaluated their programs and courses to look for unintended barriers to student success. For example, the Purdue IMPACT (Instruction Matters: Purdue Academic Course Transformation) effort between 2011 and 2018 resulted in 325 courses being redesigned to incorporate research-based strategies known to increase student outcomes, while maintaining academic quality and rigor. Other efforts have involved course sequencing and scheduling, resulting in improved success even for [graduate students](#). Please consider your program's graduation rate, course pass rates, and similar data sources to reflect on any barriers to students moving through the curriculum, and describe what steps you have taken (or are planning to take) for possible redesign of gateway courses, course sequence changes, course scheduling, or similar efforts. (3500 characters or less)**

We conduct a mandatory advising process each semester for every student enrolled in the AAS and BS programs. The data collected through mandatory advising serves as a valuable resource for promptly identifying and addressing any unexpected hurdles students may encounter while progressing through the curriculum. For example, after the addition of 200 and 300-level math courses in our curriculum aimed at enhancing our students' math preparedness, it became evident from mandatory advising that the existing math tutoring support was inadequate when students faced more upper-level math questions. This inadequacy posed challenges for our students in successfully passing upper-level math courses to progress. In response, the Geomatics Department collaborated with the Math Department to tackle this issue, leading to the recent establishment of Upper-Level Math Tutoring sessions staffed by tutors with expertise in upper-level maths. While it is still early to determine its effectiveness, we will continue to monitor feedback from students through mandatory advising sessions and are optimistic about achieving positive outcomes in the near future.

- c. Provide evidence of the overall success of students in the program. For example, you might talk about the percent of students in post-graduation employment in the field or a related field, the percent of students who go on to graduate school or other post-graduation training, and/or the percent of students who pass licensure examinations. You might also give examples of students who have been selected for major scholarships or other competitive opportunities. [Please do not use personally identifiable information.] (3500 characters or less)**

According to the data gathered from graduate exit surveys from 2016 to 2022, 80% of respondents reported their successfully secured employment in their final semester, while 5% expressed their immediate plans to pursue graduate education after graduation. This notable trend underscores the high demand for our graduates, which is no surprise, given the strong need for geomatics professionals both at state and national levels, along with the quality of our graduates. Projections indicate that this demand is poised to further increase from 2020 to 2030. The Alaska State Department of Labor and Workforce Development anticipates a growth in demand ranging from 4.76% to 11.21% for geomatics occupations such as Surveyors, Cartographers, and Photogrammetrists through 2030.

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Furthermore, the licensure exam pass rates of our graduates reported by NCEES for the Fundamentals of Surveying Exam from 2019 to 2023 have consistently remained at 100%, with the exception of 2020 and 2022, where pass rates were still commendable at 75% and 50% respectively, compared with the national pass rates that include all examinees from programs accredited by the ABET commission noted.

Reference:

Department of Labor and Workforce Development - Research and Analysis (2022). "Alaska Occupational Forecast 2020 to 2030."

5. Demonstrate demand for the program.

- a. **Analyze and respond to the data in the data sheet for your program. Provide clarifications or explanations for any positive or negative trends indicated by the data, and discuss what you are doing to improve. The Demand program review metrics are Ratio of Out-of-Discipline Credit Hours to Total Credit Hours, Number of Program Graduates Who Continue Education, and Number of Program Graduates Who Return to UAA to Pursue an Additional Program. (3500 characters or less)**

The Ratio of Out-of-Discipline Credit Hours to Total Credit Hours has shown a consistent increase, rising from 52.08% to 63.30% over this review period, with the exception of 2022, where it only dipped by less than 2% compared to the preceding year. Despite this slight deviation, all numbers surpass the initial 52.08% mark. These figures underscore that slightly more than half of students enrolled in our courses are from disciplines outside of the Geomatics major, indicating that our courses significantly contribute to fulfilling the broader educational objectives across the university.

In addition to our regular offerings, we also offer service courses tailored to support other programs within the university. The Civil Engineering BS degree requires the following course taught by our Geomatics faculty, which serves as a prerequisite for CE A201:

- GEO A155 Introduction to Surveying.

Moreover, both the AAS and BS programs in the Department of Construction Management require the following course:

- GEO A181 Construction Surveying

The number of Program Graduates continuing their education or returning to UAA for an additional program shows a consistent upward trajectory, albeit with minor dips noted in 2020 and 2022 for the number of program graduates continuing their education. Notably, there was a relatively large increase in both numbers in 2021. This pattern may be greatly attributed to AAS Geomatics graduates choosing to advance their studies by pursuing our Geomatics BS program since Geomatics currently does not offer a graduate program.

6. Demonstrate program productivity and efficiency.

Analyze and respond to the data in the data sheet for your program. Provide clarifications or explanations for any positive or negative trends indicated by the data, and discuss what you are doing to improve. The Productivity and Efficiency program review metrics are Five Year Degree and/or Certificate Awards Trend, Student Credit Hours per Full-Time Equivalent Faculty, and Full-Time Equivalent Student per Full-Time Equivalent Faculty. (3500 characters or less)

Data for the Five Year Degree and/or Certificate Awards Trend for OEC GIS is currently unavailable for this report due to its recent offering. For the Geo AAS, there was a decline noted in 2021, possibly attributed to a temporary suspension of AAS during AY21. However, since reopening AAS in Spring 2022, the data has stabilized with modest numbers, although the timeframe for analysis is limited. Most AAS graduates choose to advance their studies by pursuing the Geo BS program, indicated by the number of Program Graduates continuing their education or returning to UAA for an additional program, as discussed in #5 above. Thus, the Five Year Degree Awards Trend for the BS may be impacted by the suspension of the AAS. The decline in enrollment from 2019 to 2022 also contributes to this trend, coupled with the pandemic-related challenges. However, we are pleased to observe an upward trend in the BS enrollment in 2023 compared to 2022. While it is too early to draw firm conclusions, we are optimistic that this increase will continue due to the reinstatement of the AAS program and the dedicated outreach efforts of our faculty.

Similar encouraging trends are observed in other metrics as well. Both the Student Credit Hours per Full-Time Equivalent Faculty and the Full-Time Equivalent Student per Full-Time Equivalent Faculty experienced declines from 2019 to 2021, but have steadily increased since 2022.

We will continue to monitor these metrics closely, but the upward trend in enrollment suggests we are progressing positively.

Optional: Discuss the extent to which, if any, extramural funding supports students, equipment, and faculty in the program. (3000 characters or less)

Our faculty actively participate in research activities, securing funding from various sources including NSF, NOAA NGS, USGS, ConocoPhillips, and Hilcorp. These external fundings not only support undergraduate research but also provide resources for equipment and faculty development.

7. Assess program distinctiveness, as well as any duplication resulting from the existence of a similar program or programs elsewhere in the University of Alaska System. Is duplication justified, and, if so, why? How are you coordinating with UAA's community campuses and the other universities in the system? (2500 characters or less)

There is no duplication of Geomatics programs in the UA system.

8. Assess the strengths of your program and propose one or two action steps to address areas that need improvement. (4000 characters or less)

The Geomatics program at UAA stands as the sole program of its kind in the State of Alaska. It delivers the education required by the State of Alaska for obtaining professional surveying licenses. It plays a pivotal role in addressing the shortage of geomatics professionals not only within Alaska

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but also in other states of the US. Accredited by ABET since 1995, it underscores the program's commitment to delivering high-quality and contemporary education.

Our graduates are in high demand, with many securing employment even before completing their degrees. The program benefits from strong support and engagement from an active advisory board and has forged impactful partnerships with agencies and other programs. Geomatics occupations are widely regarded as among the best career choices in the US. Since the reopening of the AAS program, the BS Geo program has shown a notable upward trend since 2022. We anticipate this positive trajectory to continue, particularly with the dedicated outreach efforts of faculty, resulting in increased enrollment in the coming years.

To ensure our graduates remain competitive, we will maintain rigorous educational standards, expand course offerings, and actively engage students through participation in student clubs, professional organizations, and national competitions.

After completing the Program Section above, the program review committee chair should enter their name, date, and email this form to the dean, copying the committee members. If the program is fully delivered on a community campus, copy the appropriate community campus director(s).

Committee chair first name last name: Caixia Wang

Date: 3/20/2024

END OF PROGRAM SECTION

DEAN SECTION (Due on April 1)

If the program is fully delivered on one or more community campus, the dean should consult with the director(s) of the campus. After completing the Dean Section below and entering their name, the dean should email this form to the committee. If the program is delivered on a community campus, copy the appropriate community campus director(s). The program has one week to provide an optional response to the Dean Section using the Program Optional Response Section of this form.

1. Evaluation of Progress on Previous Recommendations

For each recommendation from the last program review, indicate if the recommendation has been met or has not been met and provide commendations and guidance as appropriate. Address any guidance in the provost's response to the AY21 Interim Progress Report, posted on the [Academic Program Review website](#). (2500 characters or less for each recommendation)

Recommendation 1: Temporarily suspend admissions to the AAS. Recommendation has been met.

Suspension of admissions to the AAS did not sit well with the Geomatics Advisory Board, whose members pointed out to the Dean's Office that they need the grads from that program. We are pleased that admissions to this program are open again.

Recommendation 2: Remove the tracks within the BS and focus the curriculum on training surveyors. Additionally, the program should work with Civil Engineering to integrate CE majors

into GEO A156 and stop teaching GEO A155. The revision should be completed in AY21 for implementation in fall 2021. Recommendation has been met.

The Department has done a thorough review of its curriculum that did result in one of the tracks for the BS Geo being eliminated (developer track). The Department was able to justify retaining the surveyor track and the GIS track because these application areas are sufficiently different. The Department worked with their colleagues in Civil Engineering to explore replacing GEO A155 with GEO A156. Both groups of faculty agreed that, although both are introductory geomatics courses, the needs of in-major and out-of-major students are sufficiently different to justify retaining both. Therefore, the recommendation has been thoroughly reviewed and the parts that make sense for the students have been implemented.

Recommendation 3: Revise the program so it can be taught with existing faculty positions. Recommendation has been met.

The revised curriculum is delivered with existing faculty resources.

Recommendation 4: Revise the AAS as part of the BS revision. Align lower division core courses to streamline and reduce the number of lower division courses that need to be taught. Recommendation has been met.

The AAS Geo has been streamlined as part of the curriculum revision for the BS Geo.

Recommendation 5: Rename the program to better reflect currency and promote visibility and shift specialized accreditor to EAC. Recommendation has not been met.

The Department reviewed this option, including outreach to ABET and NCEES (since the proposed name change would have required it to be accredited under a different ABET commission), and to its Advisory Board. It was decided that the name change was not desirable. The College supports this conclusion.

Recommendation 6: Increase enrollment and completion rates in the AAS. Recommendation has been met.

The Department has taken many sensible measures to promote the AAS (and the BS), including setting up a 2+2 program with Bellingham Technical College in Washington state. Admissions to the AAS Geo were only resumed recently, so enrollments in the AAS have not yet changed significantly, but we acknowledge that the Department is making appropriate efforts in the right direction.

Provide your analysis of #2-8 below, based on the data provided and the program's responses above.

2. Centrality of the Program. (2000 characters or less)

We concur that the program offers numerous opportunities for students to develop the UAA Core Competencies, and that its SLOs are central to the university's mission.

3. Program Quality and Improvement (2000 characters or less)

The BS Geo program has appropriate, documented processes for assessing and evaluating the extent to which the student outcomes are being attained, per criteria required by ABET for its accreditation. The program was recently re-accredited by ABET. The AAS Geo, as a subset of the BS

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Geo classes, is appropriately assessed as well. We concur with the Department's assertion that its Advisory Board is one of the most active in the College (we have held it up as a model in the past).

4. Student Success and the Closing of Equity Gaps (2000 characters or less)

We concur with the Department's observation that have been trending minorly upward while junior graduation rate has not, although the small size of the program makes this analysis difficult. The pass rates on the NCEES Fundamentals of Land Surveying (FS) exam are commendable. The Geo faculty run one of the more efficient mandatory faculty advising programs in the College, and were quick to adopt use of Navigate as part of a revamping of faculty advising in the current academic year.

5. Demand (2000 characters or less)

The demand for graduates of both the AAS Geo and the BS Geo is incredibly high. The program also provides service courses for the BS in Civil Engineering (GEO A155 Introduction to Surveying) and the BS Construction Management (GEO A181 Construction Surveying) programs.

6. Productivity and Efficiency (2000 characters or less)

We concur that the SCH/FTEF and FTES/FTF have been trending upward, which is positive. The Department's intention to monitor these metrics closely, along with graduation rates, is appropriate.

7. Duplication and Distinctiveness (2000 characters or less)

Not only are there no other Geomatics programs in the state, there are very few accredited Geo programs in the country.

8. Strengths and Ideas for Moving Forward (2000 characters or less)

Geo Department metrics are currently trending upward. The Department's plans to expand course offerings and increase student engagement are appropriate measures to keep this momentum. The Department's main student club, the Geomatics Student Association, has become very active in the past two years and regularly attends College events. The proposed MS in Data Science Engineering, if approved, should also be attractive for some students in the program with a fast-track option.

Dean's Final Evaluation

I commend the program for: (number and list the specific commendations in the narrative box, 2000-character limit)

The Department is commended for overhauling its curriculum with due and careful consideration for the recommendations that resulted from Expedited Program Review. It is further commended for continuing to maintain a particularly active Advisory Board and an effective process for assessment and continuous improvement.

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I recommend that the program: (number and list the specific recommendations in the narrative box, 2000-character limit)

The Department's plans to monitor enrollment, equity and efficiency metrics carefully, and to increase course offerings and opportunities for student engagement, are appropriate and recommended.

Dean's overall recommendation to the provost: Continuation -- Program is successfully serving its students and meeting its mission and goals. No immediate changes necessary, other than regular, ongoing program improvements.

If an Interim Progress Report is proposed, recommended year: N/A

If a Follow-up Program Review is proposed, recommended year: N/A

Proposed next regular Program Review: AY2031

After completing the Dean Section above, the dean should enter their name, date, and email this form to the committee. If the program is fully delivered on a community campus, copy the appropriate community campus director(s). The program has one week to provide an optional response to the Dean Section using the Program Optional Response Section below.

Dean first name last name: Kenrick Mock

Date: 4/1/2024

END OF DEAN SECTION

PROGRAM OPTIONAL RESPONSE SECTION (Due within one week of receiving dean's review)

Programs have the option to submit to the provost a response to the dean's evaluation within one week of receiving the dean's review, using the narrative box below. Please indicate whether or not you will submit an optional response below.

Are you submitting an optional response? If yes, add your response below, enter your name and date, and follow the guidance below for submission. If no, enter your name and date, and follow the guidance below for submission. **No**

Optional Response: (10,000 characters or less)

After completing this section, the form should be submitted to uaa.oaa@alaska.edu, with a copy to the dean. If the program is fully delivered on a community campus, copy the appropriate community campus director(s) as well.

7/31/2024

Committee chair first name last name: Caixia Wang

Date: 4/4/2024

END OF PROGRAM OPTIONAL RESPONSE SECTION

PROVOST SECTION (Due on August 1)

After completing, signing, and dating the Provost Section of this form, email the completed form to the program review committee and dean, with a copy to uaa.oaa@alaska.edu for posting. If the program is delivered on a community campus, copy the appropriate community campus director(s) as well.

Provost's commendations, additional or adjusted recommendations, if any, and other general comments (3500 characters or less):

I agree with the dean's commendations and would like to recognize, in particular, the faculty's curricular work, ensuring stacked programs and clear pathways, as well as the high level of engagement with the advisory board. I also agree with the dean's recommendations, in particular, the need to increase enrollment. Previous recommendations have all been met. Because there is a need to see increased enrollment, my final decision differs from that of the dean, and I am recommending a follow-up program review.

Finally, I encourage the department to continue to think about how it supports all students, regardless of their backgrounds. In particular, I am asking programs to ensure that all students have access to high-quality, highly-engaged learning opportunities, such as internships, practicums, clinicals, study away, and undergraduate research, regardless of modality or location. Programs will be asked to report on progress toward this goal in their next Program Review. These efforts naturally complement and extend our commitment to UAA's core competencies: Effective Communication; Creative and Critical Thinking; Intercultural Fluency; and Personal, Professional, and Community Responsibility.

Provost's decision: Continued Review -- Program is required to address specific issues and to undergo a follow-up review.

Interim Progress Report: N/A

Follow-up Program Review: AY2026

Next regular Program Review: N/A

Provost's signature: _____



Date: 7/31/2024