

Associate of Science Program
School of Arts & Science, University of Alaska Southeast
Annual Report AY 2022-23
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1. Program Overview & Prior Evaluation:

The Associate of Science (AS) degree, administered by the School of Arts and Sciences, provides a solid foundation in the core academic areas of mathematics, written and oral communication, the natural and social sciences, the humanities and fine arts. Although the specific basis for program design and degree requirements are unknown, the AS degree is intended to prepare students for career advancements and for transfer to baccalaureate programs with an emphasis in the sciences. The core components of the degree are:

- Completion of 60 credits at 100 level or above
- 34 credits of General Education Requirements (GERs), including MATH S152
- Of remaining 26 credits above the level of GERs, 12 credits in BIOL, CHEM, ENGR, ENVS, GEOL, MATH, PHYS or STAT
- 20 credits at the 200 level or higher, in subjects suitable for their intended career/academic paths

Additional requirements include:

- 13-14 elective credits from the School of Arts and Sciences and no more than 4 credits of PE/ODS courses.
- Cumulative GPA of at least 2.00 at UAS.
- At least 15 credits completed in residence at UAS

A comprehensive 5-year program review was conducted last year (AY22-23) for AY17-18 thru AY21-22; with the following findings:

- An ongoing effort to restructure the AS was implemented in AY22-23 concurrent to the 5-year program review, based on an ad-hoc review process that started in AY21-22. This restructuring is comprised of the following: 1) restoring program coordination and cross-campus committee membership; 2) identifying specific problems with degree requirements and proposing new changes; 3) deriving a sustainable and achievable AS-specific assessment plan with focal coursework and practical learning outcomes; 4) establishing communication and workflows between faculty coordinators and key administrative staff (advising, enrollment, IE); 5) identifying bridge opportunities with other associate/baccalaureate degrees and certificate programs; and 6) re-thinking aspects of the program mission/vision. These reforms are continuing into the current AY23-24 and will foreseeably continue into AY24-25.
- The 5-year review concluded that the Assessment Plan on record for the AS degree was defunct because it relied on methodology that conflated the AS with AA, used data from a legacy program (PAC GELO), and never included an evaluation of learning outcomes for courses that were actually tied to the AS. Ultimately, new assessment methodology derived from a designated set of flagship courses tied to specific learning outcomes needs

to be implemented, however this needs to take place after the program restructuring is completed. An interim assessment protocol (see Data Collection below) was therefore utilized in the review, and for consistency this protocol was carried over to this current annual assessment.

- The AS degree was understood to be a vital asset to UAS institutionally and the Southeast Alaska region because of its unique role as a springboard for UA baccalaureate degrees. Furthermore, although IE data about student origins were unavailable, it was also understood that the program played an important role for transitional students from the rural coastal and island communities across southeast Alaska. But retention data suggested only about 1 in 10 AS students ultimately end up with a AS from UAS, and of the remaining: 2 in 10 students graduate with a different UAS degree (typically the more flexible AA degree based on feedback from academic advising staff); 3 transfer to other degree programs with unknown trajectories; and the remaining 4 reportedly leave UAS altogether. These findings underscore the severity of degree-requirement issues identified as targets in the restructuring effort. While this attrition is significant and clearly there is room for improvement, this may simply reflect how the AS is a transitional option for more junior students with less certainty initially about their interests in academics, geography, and STEM careers.
- The AS appears to continue to fill a basic need for post-secondary degree pursuit in STEM for some students: the low yet consistent (< 6) number of AS degrees awarded is comparable to some UAS baccalaureate programs with much greater headcounts. Since AY17-18, annual enrollment headcounts in the AS ranged between 28-33, with minor year-to-year enrollment fluctuations ranging between 0-9% , no discernable enrollment trend during the period, and a slight improvement from the previous 5-year review.
- Scores for all Student Learning Outcomes for the AS ranged between 0.72-0.92 across the 5-year review period, suggesting > 3/4 of students meet program objectives for learning outcomes in coursework core to the AS degree. There were no discernible score differences among, or apparent deficiencies in individual, SLOs; however scores uniformly increased for all SLOs from AY17-18 to AY21-22, suggesting a trend in greater student competency.
- The Review noted that the UAS Office of Institutional Effectiveness was unable to provide information for key data categories of importance to the 5-year program review, so some aspects of 5-year comprehensive assessment were not feasible.

2. Student Learning Outcomes

Per the Assessment Plan for the AS degree, student learning outcomes for the AS are derived from the generic 2018 Provost's Assessment Committee for General Education Learning Outcomes (PAC GELO). These are:

- Effective Communication*: Communicate thoughts and ideas effectively, orally and in writing.
- Critical Thinking*: Demonstrate comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion.
- Creative Thinking: Present creative works of expression, innovative approaches to tasks, or solutions to problems.

- Empirical Reasoning: Articulate the scientific method and pose well-reasoned questions in the search for answers through data.
- Synthesis and Analysis: Use and extend theoretical concepts to qualitative and quantitative applications and problem solving.
- Environmental and Community Engagement: Use and extend Indigenous and global cultural perspectives with respect for diversity of people, the sustainable use of resources, and awareness of the environment.

3. Data Collection Process

Consistent with the prior 5-year review, the only source of data for this annual assessment is that extracted through the UAS Office of Institutional Effectiveness (IE). Target metrics and corresponding datasets include enrollment (head counts, annually), and degrees awarded (head counts, annually). As far as student learning outcomes, the rubric in the official Assessment Plan is infeasible: the basis of it -- a university-wide PAC GELO report -- has not been updated since 2018, and frankly, the relevance of university-wide metrics to AS-specific competencies is questionable. In the absence of valid rubric and relevant data, consistent with the 5-year review, an interim assessment was derived from IE pass/fail data for a set of 3 GERs that are gateways to other AS courses and/or are sufficiently general to be of interest to AS students. These are: MATH 152 Trigonometry (2 sections in AY22-23), ENVS 102 Earth and Environment (3 sections), and BIOL 104 Natural History of Alaska (2 sections). In reviewing syllabi, course requirements, and course learning outcomes, these 3 courses also emphasized SLOs specified in the Assessment Plan (Table 1). The % of students passing the course in a given year was used as an annual score for every SLO the course promotes, and scores were pooled across any courses sharing the same SLO to derive an average annual score for the SLO.

Table 1. Gateway GERs were used for exploratory analysis of SLOs specified in the AS Assessment Plan.

SLO	MATH 152	ENVS 102	BIOL 104
Effective Communication		X	X
Critical Thinking	X	X	X
Creative Thinking	X		X
Empirical Reasoning	X	X	X
Synthesis and Analysis	X	X	
Environmental Engagement		X	X

4. Program Evaluation Data

- Approximately 2/3 (65%) of AS students were based on the Juneau campus in AY 2022-2023. Enrollments in the past were typically split evenly between Juneau and other campuses, and perhaps this change is due to the noticeable drop (54-63%) in Ketchikan-based enrollments observed over the last decade. Enrollments were split equally between Sitka and Ketchikan campuses in AY 2022-2023.
- 22% of AS students are Alaska Native, identical to the percentages observed campus wide and in prior years. But 42% of students were from non-urban Alaska, which is a higher proportion than that observed in the past.
- The IE generated enrollment headcount for AY 2022-2023 was 34, which is in line with the 5-year average (31) and range (28-33) reported in the recent program review. It also represents a reversal of the 15% decline observed across the prior 5-year period.

- The number of degrees awarded in AY 2022-2023 was 6, which is exactly the same as the previous 5 year average. All graduates were Alaska Native students.
- Scores for the 6 SLOs identified in the AS Assessment Plan ranged between 0.56-0.64 for AY22-23, suggesting that just under 2/3 of students meet program objectives for learning outcomes in coursework core to the AS degree. There were no discernible score differences among, or apparent deficiencies in individual, SLOs; however SLO scores were significantly lower (-27%) than that reported in the 5-year comprehensive review. Based on review of underlying data, this is a product of uniformly poorer passing rates across all 3 courses targeted by the assessment methodology. It is important to emphasize that these generalizations are derived from a pooled student population that included AS students but are not necessarily specific to AS students.

Table 5. SLO scores (derived from average % of enrolled students passing) for select GERs relevant to AS students, AY22-23 vs prior 5-year period

SLO	AY22-23	5-year
Effective Communication	0.57	0.88
Critical Thinking	0.56	0.86
Creative Thinking	0.59	0.82
Synthesis and Analysis	0.59	0.83
Empirical Reasoning	0.64	0.87
Environmental Engagement	0.57	0.88

5. Synthesis/Evaluation

- Enrollment numbers and degrees awarded in AY22-23 remain consistent with the previous 5-year period, suggesting the AS degree continues to represent a small, yet non-declining and persistent number of students. Along with the recognition that the numbers of AS degrees awarded each year is comparable to some baccalaureate programs at UAS - some with much higher headcounts -- these observations suggest the AS appears to continue to fill a basic need in post-secondary achievement for some students.
- Compared to the recent past, a greater proportion of AS students in AY22-23 were based in Juneau, and this is based on enrollment drops in Ketchikan and Sitka campuses. It's not clear what the basis of this result is, however the next annual review should help determine if this is an anomaly or a trend worthy of further investigation.
- The significant drop in SLO scores in AY22-23 compared to the recent past is alarming. The SLO rubric used in this and recent assessments is not a strict indicator of AS students at all, but it is a window into student performance in a cross section of lower-division courses that are "gateways" for AS students. All 3 underlying courses - MATH152, ENVS102, and BIOL104 -- exhibited noticeably poor student passing rates so this finding is not anomalous. Student performance at-large in such gateways could be poor for systematic reasons, which foreseeably could impact AS students more than baccalaureate students. The next annual review should carefully evaluate this aspect of

the program, and more information should be gathered from the associated set of instructors.

- The 5-year program review conducted in AY22-23 already describes numerous curriculum design flaws that appear to inhibit student progress: overloading or misaligned GERs, lack of breadth in 200-level course offerings (20 credits of which are required), unnecessary stringency in which programs can count above-GER-level courses towards AS degree requirements, inaccessibility of courses for students in Sitka and Ketchikan campuses, and lack of curriculum coordination across the 3 campuses. The review also lays out a plan for a concrete series of curriculum changes that should continue thru the current AY23-24 and will foreseeably continue into AY24-25.
- As identified above, the current Assessment Plan for the AS degree is defunct because it employs methodology that conflates programs, uses legacy data, and does not allow for depth or completeness in evaluating program success. After the curriculum restructuring is completed, a priority in AY24-25 should be rapid development of new assessment methodology derived from a set number of flagship courses tied to specific learning outcomes, with the intent to incorporate the new methodology for the AY23-24 annual report.