Associate of Science Program
School of Arts & Science, University of Alaska Southeast
Annual Report 2019-2020
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<u>*Note*</u>
1) There is no prior program assessment specific to the Associates of Science (AS) degree, and the prior assessments were grouped with the Associates of Arts degree. This assessment departs from that practice and address the AS independently.
2) The most recent prior assessment was conducted 3 years ago, 2018, and encompassed a 3-yr period, i.e. FY15-17. This assessment covers the ensuing 3-yr period thru end of last academic year, i.e., FY18-20 (herein "2018-2020).

<u>1. Program Overview & Prior Evaluation</u>:
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 basis for specific program design and degree requirements is 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

The prior 'annual' evaluation for the AS degree was a cumulative 3-yr summary of data from FYs 2015-2017, e.g. Fall 2014 through Spring 2017, encompassing both AS/AA. degrees; with the following findings extracted for the AS:
- Annual enrollments ranged from 16-30 (min. estimates only since data were reported only by semester), with fall-to-fall fluctuations ranging between11-19%, no overall enrollment trends, and weak pattern of fall-to-spring decline. The prior assessment identified, but did not further investigate, whether these enrollments reflected overall patterns in student enrollments.

*Enrollment and degree headcounts for FY 2015-2017 were the sole source of evaluation data, with additional evaluation for 2 learning outcomes, effective communication and critical thinking, derived from a university wide PAC-GELO report.

- The number of AS degrees awarded annually were low (3-7), but *perceived to be* consistent since the inception of the AS degree.
- Learning outcomes* -- pooled across both Associated degrees -- indicated that nearly all students met criteria for the "beginning or above" level, but a much smaller proportion of the item met criteria for the "proficient or higher" level.
- The prior assessment identified, but did not further investigate, a serious information deficiency relating to student tracking: the proportions of students that complete AS requirements, graduate, and continue on to baccalaureate degree programs.
- The Department of Natural Sciences considered discontinuing the AS degree, but this was viewed unfavorably by the branch campuses.

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

Due to a 3-4-yr gap in assessment effort, the current evaluation represents a cumulative 3-yr summary for the period FY 2018-2020, i.e. Fall 2017 thru Spring of 2020; with comparisons to the prior 3-yr based evaluation in FY2015-2017. Since the scope of this document also includes future planning for program re-design and systematic review of program barriers, preliminary data from FY21 are also included.

Consistent with prior assessment and Assessment Plan, the only source of data is that extracted through the UAS Office of Institutional Effectiveness (IE). These target metrics and corresponding datasets include enrollment (head counts, semester and annually), and degrees awarded (head counts, annually). There are no data to evaluate student learning outcomes using the rubric in the Assessment Plan and with any consistency to the prior assessment: not only has PAC GELO report has not been updated again since the prior assessment in 2018, but also the relevance of university-wide PAC GELO data to AS-specific competencies is questionable. In the absence of valid rubric and relevant data, an exploratory effort to gain further insight about learning outcomes was attempted using IE pass/fail data for a set of 3 GERs that are gateways to

other A.S. courses and/or are sufficiently general to be interest to possible AS students: MATH 152 Trigonometry, ENVS 102 Earth and Environment, and BIOL 104 Natural History of Alaska. In reviewing syllabi, course requirements, and course learning outcomes, these 3 courses also emphasize 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

- Annual enrollment headcounts (Table 2) for 2018-2020 ranged between 28-33, with no discernable enrollment trends, year-to-year enrollment fluctuations ranging between 0-9%, and no consistent pattern of a fall-to-spring decline. These are somewhat improved from the 2015-2017 period covered in the previous assessment.
- Enrollments in 2018 and 2019 were identical to that observed in the year prior to this assessment (2017), and then exhibited a 15% drop in enrollments in 2020. Even without consideration of new enrollments for spring 2021 (data are not yet available), 2021 enrollments are nearly identical to 2020, so it is likely enrollments rebounded, or at least do not exhibit further declines, in 2021.

Table 2. Headcount of AS enrollments, 2018- 2020, and partial data for 2021that may be supplementary interest.

Unduplicated Student Enrollment by Term

Fiscal Year	2018	2019	2020	2021
1.Summer	3	6	5	5
2.Fall	17	23	21	26
3.Spring	24	21	17	
Total	33	33	28	27

- Approximately 1/2 of AS students are based on the Juneau campus (Table 3), with the remaining students split roughly across Sitka and Ketchikan campuses. Starting in 2019 there has been a noticeable drop (54-63%) in Ketchikan-based enrollments since the years prior to this assessment, and this has persisted through 2021.

Table 3. Headcount of AS enrollments on 3 UAS campuses, 2018-2020, and partial data for 2021that may be of supplementary interest.

Home Campus

Campus	2017	2018	2019	2020	2021
1.Juneau	17	15	16	15	18
2.Ketchikan	12	11	6	4	5
3.Sitka	4	7	11	9	4

- The number of degrees awarded annually over the 3-yr period remained low (≤ 6) but consistent with the previous assessment.

Table 4. Headcount of AS degrees awarded, 2018-2020.

program_det	2018	2019	2020
AS General Science	6	5	5
Total	**6**	**5**	**5**

- Scores for the 6 SLOs identified in the AS Assessment Plan ranged between 0.72-0.92 across the assessment period 2018-2020, 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 2018 to 2020 suggesting a trend in greater student competency. It is important to re-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, 2018-2020.

SLO	2018	2019	2020
Effective Communication	0.85	0.88	0.89
Critical Thinking	0.81	0.85	0.88
Creative Thinking	0.72	0.85	0.84
Synthesis and Analysis	0.87	0.81	0.92
Empirical Reasoning	0.72	0.85	0.84
Environmental Engagement	0.85	0.88	0.89

5. Synthesis/Evaluation
- The AS degree represents a small, yet non-declining and persistent number of students since data were available in 2015. Along with the recognition that the numbers of AS degrees awarded each year is comparable to some baccalaureate programs at UAS, these observations *suggest the AS appears to continue to fill a basic need in post-secondary achievement for some students*.
- The vision/purpose of the AS is ostensibly and solely to provide a bridge to baccalaureate science/math degrees at UAS, but attainment of this purpose remains unrealized due in part to institutional deficiencies in student tracking. New methods should be applied to understand the trajectories of AS students, AS graduates, and the history of AS students (graduates and those with incomplete degrees) tied to any baccalaureate science programs at UAS. Concomitantly, there is also a lack of understanding about the AS student population background, the motivations for students to declare an AS, and their workforce and higher-degree aspirations. The purpose of the *AS degree may be misaligned and should be revisited and strategically re-aligned as needed with UAS student population needs, its baccalaureate science/math degrees and its institutional capacity*.

- Based on conversations with staff advisors, anecdotal conversations with AS students, and preliminary review of degree requirements during 2020-21, there also appear to be curriculum design flaws that may fundamentally 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. *Curriculum opportunities associated with current degree requirements should be mapped in concert with 6 year plans, reconfigured as needed and possible to align with the degree purpose/vision, and flaws should be systematically addressed.*
- The current Assessment Plan for the AS degree employs methodology that conflates programs, uses legacy data, and does not allow for depth or completeness in evaluating program success; and it is therefore defunct. After a significant program/curriculum review and re-alignment effort, *new assessment methodology derived from a set number of flagship courses tied to specific learning outcomes should be re-developed and adopted.*