



Date: February 21, 2020

To: John Stalvey, Interim Provost

From: Kenrick Mock, Interim Dean, College of Engineering

Cc: Caixia Wang, Associate Professor & Department Chair, Program Committee Chair
Gennady Gienko, Professor
David Brock, Term Assistant Professor

Re: AY20 Expedited Program Review Findings

Program/s in this review: Geomatics (AAS-BS)

Specialized accrediting agency: ABET – Applied and Natural Science Accreditation Commission (ANSAC)

Campuses where the program is delivered: UAA

Members of the program review committee:

- Caixia Wang, Associate Professor & Department Chair, Program Committee Chair, UAA
- Gennady Gienko, Professor, UAA
- David Brock, Term Assistant Professor, UAA

Centrality of Program Mission and Supporting Role

The program meets UAA’s mission to support workforce development and is the only program in the state that offers the necessary credentials for licensure as a Professional Land Surveyor in Alaska. Graduates from the program fill a high demand job need for the state. The role of surveyors and geospatial workers is an industry of growing importance and the AAS and BS in Geomatics are needed both in Alaska and nationally. The Alaskan surveyors’ community and advisory board are very active and played a key fundraising role in AY20.

Program Demand (including service to other programs), Efficiency, and Productivity

Industry demand for surveyors and geospatial engineers is increasing and the 100% employment rate of the program’s graduates indicates that the demand is not met in Alaska.

The number of majors has been relatively steady for the past five years at an average of 65 BS and 15 AAS students, with an enrollment jump in 2015. The program has a good completion rate of approximately 20 awards yearly out of 80 total students. SCH production is primarily from majors and is also steady.

The program has little to no excess instructional staff capacity due to the relatively small number of faculty to offer the program. This in turn has helped the program be cost effective in instruction delivery; the tuition revenue to instructional cost is slightly above the UAA average.

As described by the program, lab and field courses require small class sizes for pedagogical reasons, but the number of majors and existing curriculum will result in poor seat utilization especially for upper division courses. For example, if with approximately 60 majors, if 30 are upperclassmen, there are simply not enough students to fill multiple 300 and 400 level courses.

The program provides service courses to civil engineering and construction management. There are collaboration opportunities with other units across campus that use GIS (natural sciences, social sciences, health, to name a few).

Program Quality, Improvement and Student Success

The program has been continuously accredited by ABET since 1995 and has a strong record of continuous improvement through program assessment. The program implements high impact practices such as internships and undergraduate research experiences. The successful placement of graduates is a strong indicator of the quality of the program.

Program Duplication / Distinctiveness

The program is highly distinctive – it is the only one in the State of Alaska and one of only 20 accredited 4-year programs in the United States.

Commendations and Recommendations

The faculty are commended on offering a high-quality program with a small number of faculty. The program is also already making excellent steps to increase enrollments by working on a 2+2 partnership with Bellingham Technical College in Washington state and developing a distance option using Quality Matters for a majority of the core courses in the program.

Additional faculty resources are not likely until enrollments increase, which will probably take multiple years. The program should seek to revise the program so it can be taught with existing faculty positions. One approach would be to reduce or restructure the concentrations. The courses that make up the Surveying and Geospatial concentrations are 25 and 24 credits respectively and must be offered for degree completion. The requirements for one typically serve as electives for the other. One approach could be to combine or partially combine the tracks to reduce the number of courses that must be taught. Other revisions may also be possible within ABET's criteria.

The revision should also tie into accreditation of the program at the next scheduled general accreditation review through EAC rather than ANSAC with a new name such as Geospatial Engineering, or a similarly named program. This is the stated intention of the program faculty and is another well-considered initiative to improve the currency and visibility of the program.

The Developer concentration in turn is a subset of computer science and courses from the Geospatial concentration and thus are largely dependent on any revision that may occur to the Geospatial track.

The AAS should be included as part of the revision. As a subset of the BS in Geomatics, Surveying concentration, a revision of the BS would impact the AAS. Alignment of the lower division core courses for the BS and AAS could also offer the potential for streamlining and reduce the number of lower division courses that need to be taught. Finally, enrollment and degree awards in the AAS are notably low over the past six years. While actions have been taken to increase enrollment in the BS, similar effort should also be applied to the AAS and the program examined to see what actions could be taken to increase the completion rate.

Decision: Revision