



Date: February 14, 2020

To: John Stalvey, Interim Provost

From: Kenrick Mock, Interim Dean, College of Engineering

Cc: Jens Munk, Professor & Department Chair, Program Committee Chair
Joe Mixsell, Term Professor
Todd Petersen, Associate Professor
Matt Kupilik, Associate Professor

Re: AY20 Expedited Program Review Findings

Program/s in this review: Electrical Engineering (BS)

Specialized accrediting agency: ABET – Engineering Accreditation Commission (EAC)

Campuses where the program is delivered: UAA

Members of the program review committee:

- Jens Munk, Professor & Department Chair, Program Committee Chair, UAA
- Joe Mixsell, Term Professor, UAA
- Todd Petersen, Associate Professor, UAA
- Matt Kupilik, Associate Professor, UAA

Centrality of Program Mission and Supporting Role

The program meets UAA's mission to support workforce development in the high demand job field of electrical engineering. EMSI data indicates that approximately 90% of the program's graduates work in Alaska. The program collaborates with other Engineering departments, Physics, Geological Sciences, and with numerous government entities nationally and in the state. Some courses are cross-listed and shared with other departments (Physics, CS&E, ME, CE).

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

Industry demand is high inside Alaska and Outside with graduates from the program that are now in senior engineering positions.

The number of majors has been trending higher in the past three years, up to 125 in 2019. SCH production is primarily from majors and has grown commensurately with enrollment. The number of degrees awarded has also grown, averaging 16 awards per year for 2017-2019. The course pass rates are also relatively high, generally over 80%, for all levels.

The program did have excess instructional staff capacity for several years. The FTEF for 2017-2019 averages to 3.5 while the actual number of tenure-track faculty in the department had a high of 7. This is particularly reflected in 2019 when the Cost/SCH jumped by almost \$100 over the previous year. With the departure of two faculty members from the department, cost/SCH is expected to be more in line with the other baccalaureate engineering programs moving forward. With an additional planned retirement next year, this will bring the number of full-time faculty down to 4, which will make the program much more cost-effective.

Classroom seat utilization is near the UAA average and should increase as the program's plans to reduce course offerings go into effect (e.g. offering some electives every other year, some required courses once a year).

Program Quality, Improvement and Student Success

The program has been continuously accredited by ABET since 2007 and the faculty participate regularly in program assessment. Students pass the FE exam at rates above the national average and many have been admitted into competitive graduate programs and established impressive careers. The program also implements high impact practices such as community-based capstone projects and undergraduate research experiences. The successful placement of graduates is a strong indicator of the quality of the program.

Program Duplication / Distinctiveness

UAF has the only other EE program in the state. The programs are collaborating with each other and offer distinctive upper division courses that are the product of unique faculty expertise on both campuses. There is more demand for graduates in the State than is currently produced by UAA and UAF combined.

Commendations and Recommendations

The faculty are commended for growing a quality program and for integrating community projects into the curriculum. The program should continue to seek items for continuous improvement, collaborate with UAF to best utilize our respective expertise, and operate in a cost-effective manner.

Decision: Continuation