



Date: February 14, 2020

To: John Stalvey, Interim Provost

From: Kenrick Mock, Interim Dean, College of Engineering

Cc: Jifeng Peng, Associate Professor & Department Chair, Program Committee Chair
Nicolai Lobontiu, Professor

Re: AY20 Expedited Program Review Findings

Program/s in this review: Mechanical Engineering (BS-MS)

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

Campuses where the program is delivered: UAA

Members of the program review committee:

- Jifeng Peng, Associate Professor & Department Chair, Program Committee Chair, UAA
- Nicolai Lobontiu, 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 mechanical engineering. EMSI data indicates that approximately 80% of the program's graduates work in Alaska, helping to fulfill the higher education needs of the state. The program collaborates with other Engineering departments on curriculum. The program also has many partnerships with local industry, government, and non-profit organizations.

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

Industry demand remains high in Alaska and nationally/globally.

The program experienced huge growth during the review period and has been the largest program in the College of Engineering for several years, with 314 BSME majors in 2019. SCH production is primarily from majors and has grown commensurately with enrollment. The number of degrees awarded has also grown, averaging 39 BSME awards per year for 2016-2019. The course pass rates are

also relatively high, generally over 80%, for all levels. The MSME program has much smaller numbers but is still fairly new. The first students enrolled in 2015. The number of majors has doubled to 10 in 2019 and has demonstrated growth.

The program has some excess instructional staff capacity. The FTEF for 2015-2019 averages to 5.1 while the actual number of tenure-track faculty in the department has averaged 8. Nevertheless, through enrollment management together with the number of majors and the CoEng tuition surcharge, the combined BSME+MSME programs have come close to breaking even and was profitable in 2018. The additional instructional capacity has allowed some faculty to increase their research workload.

The average class size at 22 is at the high end for the College.

Program Quality, Improvement and Student Success

The program has been continuously accredited by ABET since 2007 and the faculty participate regularly in robust program assessment. Students perform well on the national FE exam. The program also implements high impact practices such as community-based capstone projects and undergraduate research experiences. A large number of students also participate in internships. The successful placement of graduates in industry or graduate school is a strong indicator of the quality of the program.

Program Duplication / Distinctiveness

UAF has the only other BSME and MSME programs in the state. The faculty at UAA and UAF have technical expertise in different areas and upper-level elective and graduate courses in particular emphasize different areas, which makes the relationship between the programs complementary rather than competitive. The programs are collaborating with each other on shared curriculum, capstone projects, joint research, and intercampus club activities. Both programs primarily serve their own regions of the state and 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 offering high quality programs with close connections to industry needs in Alaska. I concur with the department's stated goals and initiatives that will help increase enrollment, maintain and enhance the program, increase student success, operate in a cost-effective manner, and generate additional revenue.

Decision: Continuation