



Date: February 14, 2020

To: John Stalvey, Interim Provost

From: Kenrick Mock, Interim Dean, College of Engineering

Cc: Frank Moore, Professor & Department Chair, Program Committee Chair
Shawn Butler, Term Assistant Professor
Christoph Lauter, Assistant Professor
Sebastian Neumayer, Assistant Professor
Frank Witmer, Assistant Professor

Re: AY20 Expedited Program Review Findings

Program/s in this review: Comp Systems Engineering (BS)

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

Campuses where the program is delivered: UAA

Members of the program review committee:

- Frank Moore, Professor & Department Chair, Program Committee Chair, UAA
- Shawn Butler, Term Assistant Professor, UAA
- Christoph Lauter, Assistant Professor, UAA
- Sebastian Neumayer, Assistant Professor, UAA
- Frank Witmer, Assistant Professor, UAA

Centrality of Program Mission and Supporting Role

The program meets UAA's mission to support workforce development for the high demand job field of computing professionals. In Alaska, nationally, and globally there is strong demand for computer engineers. EMSI data indicates that 70% of program graduates work in Alaska and the program has built many community and industry collaborations that revolve around research, internships, and capstone projects. ConocoPhillips recently donated a high-performance computing cluster to the department.

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

Industry demand is very strong both within and outside Alaska.

The number of majors has been relatively steady with an average of approximately 60 students over the past three years. The number of awards is very low, with only 2 awards in 2019 and 6 in 2018. While it may be the case that students are still making their way through the program since CSE was split as a standalone degree from the BSE in 2015, it is worth noting that the other BSE programs have had more significant numbers of students graduate under their respective standalone degrees starting in 2016, suggesting that enrollment is simply lower in the CSE program. Nevertheless, the number of majors do suggest there should be an uptick in the number of awards.

The program is taught primarily by CS&E faculty but also by EE faculty. There has been little to no excess instructional CS&E 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.

Classroom seat utilization is relatively strong at an average class size of 19.

The program does provide some service courses to the EE program.

Program Quality, Improvement and Student Success

The program has been continuously accredited by ABET since 2007 and the faculty participate regularly in program assessment. The program has been revised several times to meet changing demand and changing technologies. The program also implements high impact practices such as internships and undergraduate research experiences that are integrated into the curriculum. The successful placement of graduates is a strong indicator of the quality of the program.

Program Duplication / Distinctiveness

UAF has the only other CSE program in the state and also has a relatively small number of faculty. The faculty expertise at the two campuses complement rather than compete with each other, and the programs are also quite different. The UAF program focuses on hardware while the UAA program focuses on software. Additionally, the programs collaborate on shared courses.

Commendations and Recommendations

The faculty are commended for being at the forefront of sharing core courses by distance with UAF's CS department – the department has the strongest enrollments in shared courses on both campuses and has identified and begun finding solutions to issues that need to be addressed to increase course sharing in the College. Additionally, the faculty are commended on maintaining a quality program with a relatively small number of faculty members.

It is noted that the CSE program is composed primarily of courses required by the CS program and courses required by the EE program. As such, there is a high dependency on those other programs and little cost savings would be realized through the elimination of the CSE program. Nevertheless, the low number of awards and modest number of majors does raise a concern. The program should carefully monitor the progress of students, identify hurdles/bottlenecks toward degree completion, and take any necessary actions to ensure students will be successful completing the degree.

Decision: Continuation