

COMMITTEE RECOMMENDATION FOR CIVIL & ENVIRONMENTAL ENGINEERING (CEE)

STRENGTHS:

- As “America’s Arctic University,” the Civil and Environmental Engineering program represents a critical defining characteristic of UAF.
- Civil engineers design infrastructure in Alaska’s extreme conditions, their work directly supports Alaska’s most critical industries.
- The program offers hands-on teaching and co-curricular activities (i.e. Steel Bridge, Concrete Canoe, and Ice Arch). Student groups are highly competitive and successful.
- State of the art teaching and research labs, to include the ELIF High Bay space.
- Undergraduate students take advantage of alternate learning opportunities through URSA, BLAST, TVEP programs and funding, in addition to learning opportunities in research labs of the CE faculty.
- Senior capstone projects typically feature one or two projects in rural Alaska, where students travel to the village to help design infrastructure.
- Faculty are highly productive in research production as evidenced through publications.
- Faculty are awarded a significant amount of research funding.
- CEE is the only engineering program that teaches arctic engineering in face-to-face and synchronous environment.
- Undergraduate students are employable and competitively sought out by companies and agencies in the state and nation.
- The ABET review in 2017 found no major weaknesses or deficiencies. The focus on northern issues was lauded as a strength.

WEAKNESSES:

- Several faculty close to retirement and uncertainty regarding whether these positions will be approved to be filled given current budget constraints.
- Key unfilled position in geotechnical engineering from attrition in 2015.
- Unfilled lab technician position that supervises teaching labs and performs maintenance on research equipment. Position is not approved for rehire and was noted as a concern on ABET report in 2017.
- Loss of key contributors to arctic themes

OPPORTUNITIES:

- Expanded research opportunities with the high bay space coming online. This helps the state with their most pressing engineering issues.
- Conduct a program revitalization to develop an innovative and integrative curriculum that meets the needs of future engineers.
- The department plans to propose a BS/MS five-year degree option.
- Establishing and solidifying interdisciplinary research/academic efforts (e.g., social sciences, art, Native studies, etc.) into CEE engineering programs.

- Better integration and alignment with UAA.

THREATS:

- Lack of understanding by decision makers as to the importance of an arctic civil engineering teaching a research program in Alaska.
- Current state/university funding limits the ability to attract new and competitive faculty as highly successful faculty prepare to retire.
- Negative publicity of budget issues has caused decline in enrollment.
- Risk of losing more funding for teaching support (i.e., adjunct and term faculty).
- High cost of graduate student support as compared to other universities of similar size, exacerbated by an increase in overhead, making it harder to be competitive on proposals.
- Loss of faculty FTEs has reduced opportunities for research.

CENTRALITY TO MISSION:

- Focus on northern issues and development of Alaska infrastructure.

INDICATORS OF QUALITY:

- Student pass rates on the Fundamentals of Engineering exam are above the national average at 74%.
- Highly productive faculty in research and external funding.

COST-EFFECTIVENESS:

- A high number of students (161) for a faculty FTE of about 5. Unrestricted salaries and benefits approximately \$1 million.

	MAJORS	DEGREES
Civil Engineering BS	FY15: 168/ FY19: 140	FY15: 21/ FY19: 23
Civil Engineering MS	FY15: 31/ FY19: 20	FY15: 9/ FY19: 5
Water & Environmental MS	FY15: 5/ FY19: 2	FY15: 1/ FY19: 0

- Water & Environmental Science was previously Environmental Quality Science.

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Civil Engineering BS:

RECOMMENDATION:	ADDITIONAL COMMENTS:	DATE FOR FOLLOW-UP:
Continuation (8 votes)		

Civil Engineering MS:

RECOMMENDATION:	ADDITIONAL COMMENTS:	DATE FOR FOLLOW-UP:
Continuation (8 votes)		

Water & Environmental Science MS:

RECOMMENDATION:	ADDITIONAL COMMENTS:	DATE FOR FOLLOW-UP:
Deletion (8 votes)		