

COMMITTEE RECOMMENDATION FOR GEOLOGICAL ENGINEERING

STRENGTHS:

- The Geological Engineering (GE) program has been ranked among the top 10 in the nation on several occasions- it is an ABET accredited program.
- *NOT* duplicated in the UA system.
- Program is critical to resource development in Alaska.
- High level of faculty research productivity, with success in attracting external funding.
- There is strong donor & industry support and robust community engagement.
- The program contributes to providing a highly skilled workforce in high-demand resource extraction areas, consulting, and for state and federal agencies.

WEAKNESSES:

- It is a challenge to deliver ~50 credits to undergrads and grads: there is little margin of error in planning timelines of course offerings.
- GE Program is at a critical mass due to retirements, sabbaticals, attrition. It is extremely difficult to teach all required courses with existing faculty.
- Funding for modernizing equipment for lab spaces needed; other limiting factors Budget cuts.
- Low enrollments and graduation numbers.

OPPORTUNITIES:

- Alaska is a resource rich state- critical nature of the Mining and Geological Engineering Department and the value it brings to the University and the State can be leveraged to increase revenue and stakeholder involvement.
- The mining sector in Alaska is an untapped market- GE graduates are needed in this and other related fields.
- The industry has not seriously engaged UAF in many of its problems. Therefore, these problems in the mining sector also represent an untapped market and potential revenue streams.
- Alaska Miners Association (in the Appendix) states that “mining and geological engineers” are a priority occupation because of difficulty in recruiting them.
- US Bureau of Labor Statistics, jobs for Mining and Geological Engineers are expected to increase by 6% through 2024.

THREATS:

- Faculty attrition has led to loss of capacity and stability that impact accreditation. Loss of accreditation imperils program.
- Relative low number of students compared to other CEM programs
- Budget cuts with more to come.

CENTRALITY TO MISSION:

- Central to UAF Mission: *“The mission of the only Geological Engineering program in Alaska, is to advance and disseminate knowledge related to mineral and energy*

exploration, evaluation, development and production; engineering site selection, construction and construction material production; and groundwater and geo-environmental engineering including geologic hazards assessment, through creative teaching, research and public service with an emphasis on Alaska, the North and its diverse peoples.”

- The department serves Alaska workforce development needs for resource extraction.
- Addresses UAF Core Themes Educate and Engage.

INDICATORS OF QUALITY:

- High level of faculty research productivity.
- GE undergraduate students won the first place in AEG annual meeting poster contest in 2017 and third place in 2019.
- Graduates of the program typically join the resource industry, engineering consulting companies, or state or federal agencies.
- Department organized the prestigious 2015 APCOM International Conference in Fairbanks.

COST-EFFECTIVENESS:

- Salaries and Benefits total for ME & GE~ \$1.33M, which is a high cost per student.

	MAJORS	DEGREES
Geological Engineering BS	FY15: 45/ FY19: 43	FY15: 7/ FY19: 7
Geological Engineering MS	FY15: 4/ FY19: 4	FY15: 1/ FY19: 2

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Geological Engineering BS:

RECOMMENDATION:	ADDITIONAL COMMENTS:	DATE FOR FOLLOW-UP:
Revision or restructure (8 votes)	create concentration in Geological Engineering within the Civil Engineering BS & at that point eliminate Geological Engineering BS	One year

Geological Engineering MS:

RECOMMENDATION:	ADDITIONAL COMMENTS:	DATE FOR FOLLOW-UP:
Deletion (8 votes)	fold emphasis into Civil Engineering graduate program	