

Geological Engineering BS

Undergraduate Certificate
Master's

Associate
Doctorate

Baccalaureate
Post-Baccalaureate Certificate

Add

Change

Implementation Semester:

Year:

Provide information for the 5th year after program change approval if a baccalaureate or doctoral degree program; for the 3rd year after program approval if a master's or associate degree program; or for the 2nd year after program approval if a graduate or undergraduate certificate. If information is provided for another year, specify () and explain in the program summary attached. Note that revenues and

General Fund

Student Tuition & Fees

Indirect Cost Recovery

TVEP or Other (specify):

\$ -

Federal Receipts

TVEP or Other (specify):

\$	-
\$	-
\$	-
\$	-
\$	-
\$	-

Yes

X

No

Year 1: 30

Year 2: 30

Year 3: 30

Year 4: 30

Page number of attached summary where demand for this program is discussed:

N/A

Graduate TA
Adjunct
Term
Tenure track

0
0
0
2 (Eliminated)

Graduate TA
Adjunct
Term
Tenure track

2
0
0
2 (Retained)

Former assignment of any reassigned faculty: MinGeo
For more information see attached summary page:

Program Affected

Anticipated Effect

Civil & Environmental Engineering Mining Engineering Civil engineering curriculum will be modified to promote shared concepts/courses between CE and GE Mining will be in a smaller department, but can still share courses with GE

Page number of attached summary where effects on other programs are discussed: N/A

Seek to maintain ABET accreditation for GE program

Educates undergraduate students
Research creates and disseminates new knowledge - Arctic focused
Page in attached summary where alignment is discussed:

Promotes development of resource extraction industry
Promotes development of infrastructure statewide
Develops responses to arctic-related geohazards
Develops a well-trained engineering workforce

Available to students attending classes at campuses X
Available to students via e-Learning
Partially available to students via e-Learning X
Page # in attached summary where e-Learning is discussed:

Yes No X

[\(Click here for more information\)](#)

Submitted by:

Chancellor/Provost

Date:

Consensus support of AC

Not supported by AC

Recommend by VPASR

Date:

Recommend by VPASR

Date:

²Net FTE (full-time equivalents). For example, if a faculty member will be reassigned from another program, but his/her original program will hire a replacement, there is one net new faculty member. Use fractions if appropriate. Graduate TAs are normally 0.5 FTE. The numbers should be consistent with the revenue/expenditure information provided.

Attachments: X Summary of Degree or Certificate Program Proposal Other (optional)

Revised: 11/11/2019

[1] Sometimes the courses required by a new degree or certificate program are already being taught by a UA university, e.g., as a minor requirement. Similarly, other program needs like equipment may already be owned. 100% of the value is indicated even though the course or other resource may be shared.

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Daniel M. White, Chancellor

P.O. Box 757500
Fairbanks, Alaska 99775-7500
907-474-7112
uaf.chancellor@alaska.edu
www.uaf.edu/chancellor/

March 23, 2020

TO

UAF Expedited Program Review

Page 2

edges of our mission, and reducing footprint. And we will continue to identify what work we can simply stop doing.

I concur with

except in the following where I have recommended a different path:

1. Atmospheric science delete with opportunities for students in existing departments in similar areas (e.g., physics, chemistry, engineering) including possible alternative appointments at UAF for research intensive faculty
2. BA Earth Science delete
- 3.

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

COMMITTEE RECOMMENDATION FOR GEOLOGICAL ENGINEERING

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	

organize, analyze, and present that data. While courses exist in both programs on instrumentation and GIS analysis, combining GE and CE into one department offers the opportunity to revitalize these courses and others addressing the growing need for addressing big data in engineering.

Increasing synergy between the GE and CE programs. Sharing the expertise of faculty members between these two programs will increase the synergy and student opportunities. Currently, GE students take several CE classes as technical electives (e.g., CE341, CE344, CE498), and vice versa (e.g., GE440, GE441). Additionally, GE and CE faculty co-teach one graduate-level course (GE/CE626). Migrating the GE program into the CE department will facilitate CE students to take more GE courses as technical electives and vice versa through greater advertisement of the course offerings and potential co-teaching opportunities.

Maintaining the ability to address the needs of the Mineral Resources community. Graduates of the GE program will still be able to work in the mining industry, regardless of where the program resides. Depending on their interests, the GE students can take GEOS 332 Ore Deposits and Structure as a technical elective and complete a Mining minor to focus on mineral-related engineering problems and design.

One concern: to remain an ABET-accredited program, GE must include geophysics. As part of the ABET criteria, graduates from the GE program must be able to apply elements of geophysics to engineering problems. Thus, regardless of where GE resides, the program must retain a faculty member with the needed expertise to teach geophysics. Those geophysics-related courses could be offered to other departments, as required.