

## BACHELOR OF SCIENCE IN GEOLOGICAL ENGINEERING (2021-2022 Catalog Year)

### First Year: Fall

GE F101 – Intro to Geological Engr.	1
MATH F251X – Calculus I	4
CHEM F105X – General Chemistry	4
MIN F202 or CE F112 Surveying	2 or 3
WRTG F111X – Intro. to Acad. Writing	3
LS F101X – Library Info. & Research	1
	<hr/> 15 or 16

### First Year: Spring

GE F261 – General Geology for Engr.	3
MATH F252X – Calculus II	4
CHEM F106X – General Chemistry	4
COJO F1X1X – Oral Comm.*	3
WRTG F21XX –Writing*	3
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### Second Year: Fall

MATH F253X – Calculus III	4
GEOS F213 – Mineralogy	4
PHYS F211X – General Physics	4
GER A, H, SS, E (1 of 6)	3
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### Second Year: Spring

MATH F302 – Differential Eqn.	3
ES F208 – Mechanics	4
PHYS F212X – General Physics	4
GEOS F214 – Petrology & Petrography	4
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### Third Year: Fall

ES F331 – Mechanics of Materials	3
GE F326 – Intro. to Geotech. & Fndts.	4
GEOS F322 – Stratigraphy and Sed.	4
MIN F390 or STAT F200** Statistics/Econ	3
ES F346 – Intro to Thermodynamics	3
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### Third Year: Spring

ES F341 – Fluid Mechanics	4
GEOS F314 – Structural Geology	4
MIN F370 – Rock Mechanics	3
GE F375 – Terrain Analysis and GIS	3
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### Summer: After Third Year

GE F381 – Field Methods and Applied Design I	2
GE F382 – Field Methods and Applied Design II	2
	<hr/> 4

### Fourth Year: Fall

GE F405 – Engr. and Envr. Geophysics	3
GE F420 – Groundwater Engineering	3
Technical Elective	3
((**ESM F450 (if choosing STAT F200)	3))
GER A, H, SS, E (2 of 6)	3
GER A, H, SS, E (3 of 6)	3
	<hr/> 15 or 18

### Fourth Year: Spring

GE F480 – Senior Design	3
Technical Elective	3
GER A, H, SS, E (4 of 6)	3
GER A, H, SS, E (5 of 6)	3
GER A, H, SS, E (6 of 6)	3
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\* Students may choose from a suite of courses to fulfill this requirement.

Students must take the Fundamentals of Engineering Exam in order to graduate.

**GER A, H, SS, E:** General Education Requirements – Arts, Humanities, Social Science, Ethics

**Technical electives:** Complete 6 credits from the following technical electives:

#### GEOTECHNICAL/ARCTIC OPTION

- GE F430 Geomechanical Instrumentation
- GE F440 Slope Stability
- GE F441 Geohazard Analysis
- GE F445 Design of Earth Dams and Emb.
- CE F422 Foundation Engineering
- CE F424 Permafrost Engineering
- CE F401 Arctic Engineering

#### MINING OPTION

- GE F435 Exploration Design
- MIN F482 Computer-aided Mine Design
- GEOS F332 Ore Deposits and Structure

#### GIS OPTION

- GE F376 GIS Appl. In Geol. and Envr. Engr.

#### PETROLEUM OPTION

- PETE F302 Well Logging
- PETE F407 Petroleum Production Engineering
- PETE F426 Drilling Engineering

#### WATER RESOURCES/ENVR ENGR OPTION

- CE F341 Environmental Engineering
- CE F344 Water Resources Engineering
- CE F442 Environmental Engineering Design
- CE F445 Hydrologic Analysis and Design

STUDENT NAME: \_\_\_\_\_

ID #: \_\_\_\_\_

**2021-2022 CATALOG**  
**GEOLOGICAL ENGINEERING**  
B.S. Degree Requirements  
Minimum required credits: 127

*Students must earn a C- grade (1.7) or better in each course.*

**GENERAL EDUCATION REQUIREMENTS:**  
**COMMUNICATIONS:**

WRTG F111X (3) \_\_\_\_\_  
WRTG F21XX\* (3) \_\_\_\_\_  
COJO F1X1X\* (3) \_\_\_\_\_

\*ARTS: (3) \_\_\_\_\_

\*HUMANITIES: (3) \_\_\_\_\_

\*SOCIAL SCIENCES: (3) \_\_\_\_\_

\*SOCIAL SCIENCES: (3) \_\_\_\_\_

\*ADDITIONAL A, H, SS: (3) \_\_\_\_\_

\*ETHICS: (3) \_\_\_\_\_

\*Course meeting Alaska Native-themed requirement:  
\_\_\_\_\_

**MATHEMATICS:**

MATH F251X (4) \_\_\_\_\_ MATH F252X (4) \_\_\_\_\_  
§MATH F253X (4) \_\_\_\_\_ §MATH F302 (3) \_\_\_\_\_

**NATURAL SCIENCE:**

CHEM F105X (4) \_\_\_\_\_ CHEM F106X (4) \_\_\_\_\_  
§PHYS F211X (4) \_\_\_\_\_ §PHYS F212X (4) \_\_\_\_\_

**LIBRARY & INFO. SKILLS:**

LS F101X (1) \_\_\_\_\_

**MAJOR REQUIREMENTS**

*Complete the following program (major) requirements (includes courses indicated with § to the left):*

ES F208 (4) \_\_\_\_\_  
ES F331 (3) \_\_\_\_\_  
ES F341 (4) \_\_\_\_\_  
ES F346 (3) \_\_\_\_\_  
GE F101 (1) \_\_\_\_\_  
GE F261 (3) \_\_\_\_\_  
GE F326 (4) \_\_\_\_\_  
GE F375 (3) \_\_\_\_\_  
GE F381 (2) \_\_\_\_\_ (W)  
GE F382 (2) \_\_\_\_\_ (W)  
GE F405 (3) \_\_\_\_\_  
GE F420 (3) \_\_\_\_\_  
GE F480 (3) \_\_\_\_\_ (W)  
GEOS F213 (4) \_\_\_\_\_  
GEOS F214 (4) \_\_\_\_\_  
GEOS F314 (4) \_\_\_\_\_  
GEOS F322 (4) \_\_\_\_\_  
MIN F202 (2) \_\_\_\_\_ or CE F112 (3) \_\_\_\_\_  
MIN 370 (3) \_\_\_\_\_  
MIN 390 (3) \_\_\_\_\_ or STAT F200 (3) \_\_\_\_\_  
and ESM F450 (3) \_\_\_\_\_

*Technical electives:*

\_\_\_\_\_ (3) \_\_\_\_\_ (3) \_\_\_\_\_

*Must take the Fundamentals of Engineering Exam.*

EXAM TAKEN: \_\_\_\_\_

\* For a list of allowable classes, check the UAF catalog or speak with your advisor.

Total minimum credits required for degree: 127