# 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

**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

**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
- **15 or 16**

**Second Year: Spring**
- MATH F302 – Differential Eqn. 3
- ES F208 – Mechanics 4
- PHYS F212X – General Physics 4
- **Geros F214 – Petrology & Petrography** 4

**Third Year: Fall**
- ES F331 – Mechanics of Materials 3
- GE F236 – 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

**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

**Summer: After Third Year**
- GE F381 – Field Methods and Applied Design I 2
- GE F382 – Field Methods and Applied Design II 2

**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

**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

**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

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

  **GIS Option**

  **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

* 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

Modified Jan 2022
STUDENT NAME: _______________________

ID #: ___________________________

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

GENERAL EDUCATION REQUIREMENTS:

COMMUNICATIONS:
WRTG F111X (3) __________
WRTG F21XX* (3) __________
COJO F1X1X* (3) __________

*ARTS: (3) __________________________________

*HUMANITIES: (3) ____________________________

*SOCIAL SCIENCES: (3) _______________________

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*ADDITIONAL A, H, SS: (3) ____________________

*ETHICS: (3) _________________________________

*Course meeting Alaska Native-themed requirement:
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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) _______

Total minimum credits required for degree: 127

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

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.

Modified Jan 2022