

BACHELOR OF SCIENCE IN GEOLOGICAL ENGINEERING (>2025-26 Catalog Year)

First Year: Fall

| | |
|--------------------------------------|----------|
| GE F101 – Intro to Geological Engr. | 1 |
| MATH F251X – Calculus I | 4 |
| CHEM F105X – General Chemistry | 4 |
| COJO F1X1X – Oral Comm.* | 3 |
| WRTG F111X – Intro. to Acad. Writing | 3 |
| LS F101X – Library Info. & Research | 1 |
| | <hr/> 16 |

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 |
| | <hr/> 15 |

Third Year: Fall

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|---|----------|
| 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 |
| | <hr/> 17 |

Summer: After Third Year

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

Fourth Year: Fall

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|--------------------------------------|----------------|
| 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 |

First Year: Spring

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|-------------------------------------|----------|
| GE F261 – General Geology for Engr. | 3 |
| MATH F252X – Calculus II | 4 |
| CHEM F106X – General Chemistry | 4 |
| CE F112 Surveying | 3 |
| WRTG F21XX –Writing* | 3 |
| | <hr/> 17 |

Second Year: Spring

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|-------------------------------------|----------|
| MATH F302 – Differential Eqn. | 3 |
| ES F208 – Mechanics | 4 |
| PHYS F212X – General Physics | 4 |
| GEOS F214 – Petrology & Petrography | 4 |
| | <hr/> 15 |

Third Year: Spring

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|------------------------------------|----------|
| ES F341 – Fluid Mechanics | 4 |
| GEOS F314 – Structural Geology | 4 |
| MIN F370 – Rock Mechanics | 3 |
| GE F375 – Terrain Analysis and GIS | 3 |
| | <hr/> 14 |

Fourth Year: Spring

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|--------------------------|----------|
| 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 |
| | <hr/> 15 |

* 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 #: _____

2025-2026 CATALOG
GEOLOGICAL ENGINEERING
B.S. Degree Requirements
Minimum required credits: 128

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):*

CE F112 (3) _____
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 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: 128