GEOLOGICAL ENGINEERING
B.S.

Program Requirements
< Back to Department (http://catalog.uaf.edu/academic-departments/civil-geological-environmental-engineering/)

Minimum Requirements for Geological Engineering B.S.: 127 credits

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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH F253X</td>
<td>Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>MATH F302</td>
<td>Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>MIN F202</td>
<td>Surveying and CAD for Engineers</td>
<td>2-3</td>
</tr>
<tr>
<td>or CE F112</td>
<td>Elementary Surveying</td>
<td></td>
</tr>
<tr>
<td>MIN F370</td>
<td>Rock Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>MIN F390</td>
<td>Geostatistics and Mineral Economics</td>
<td>3-6</td>
</tr>
<tr>
<td>or STAT F200X and ESM F450</td>
<td>and Economic Analysis and Operations</td>
<td></td>
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</tbody>
</table>

Technical Electives 2

Complete 6 credits from any of the following options: 6

Geotechnical/Arctic Option

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

GIS Option

GE F376 | GIS Applications in Geological and Environmental Engineering |

Mining Option

GEOS F332 | Ore Deposits and Structure |
MIN F482 | Computer-aided Mine Design: VULCAN |

Petroleum Option

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

Water Resources/Environmental Engineering Option

CE F341 | Introduction to Environmental Engineering |
CE F344 | Water Resources Engineering |
CE F442 | Water and Wastewater Treatment Design |
CE F445 | Hydrologic Analysis and Design |

Fundamentals of Engineering (FE) Examination

Complete the Fundamentals of Engineering (FE) examination administered by the State of Alaska.

Total Credits 127-135

1 Fulfills the baccalaureate capstone requirement.
2 Technical elective credits must contain engineering design and be selected by the student from the list of approved technical electives from the geological engineering program in conference with the advisor and approved by the department. Students are expected to complete all prerequisites required for the selected courses.