**M.S., GEOLOGICAL ENGINEERING**

**Admission Requirements**

Complete one of the following admission requirements:

- Complete a bachelor’s degree in geological engineering;
- Complete a bachelor’s degree in engineering and complete the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GE F365</td>
<td>Geological Materials Engineering</td>
<td>3</td>
</tr>
<tr>
<td>or MIN F370</td>
<td>Rock Mechanics</td>
<td></td>
</tr>
<tr>
<td>GE F405</td>
<td>Engineering and Environmental Geophysics and Groundwater Engineering</td>
<td>6</td>
</tr>
<tr>
<td>and GE F420</td>
<td></td>
<td></td>
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- Complete a bachelor’s degree in geology and complete the following courses:

<table>
<thead>
<tr>
<th>Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>ES F208</td>
<td>Mechanics</td>
<td>4</td>
</tr>
<tr>
<td>ES F331</td>
<td>Mechanics of Materials</td>
<td>3</td>
</tr>
<tr>
<td>ES F341</td>
<td>Fluid Mechanics</td>
<td>4</td>
</tr>
<tr>
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<td></td>
</tr>
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<td>3</td>
</tr>
<tr>
<td>GE F420</td>
<td>Groundwater Engineering</td>
<td>3</td>
</tr>
<tr>
<td>MIN F408</td>
<td>Mineral Valuation and Economics</td>
<td>3</td>
</tr>
</tbody>
</table>

- Complete a bachelor’s degree in the natural sciences and complete the following:

<table>
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<tr>
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<td>MIN F408</td>
<td>Mineral Valuation and Economics</td>
<td>3</td>
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</table>

- Submit GRE scores.

**Program Requirements**

**Minimum Requirements for Geological Engineering M.S. Degree (Thesis Option): 30 credits**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GE F420</td>
<td>Groundwater Engineering</td>
<td></td>
</tr>
<tr>
<td>GE F430</td>
<td>Geomechanical Instrumentation</td>
<td></td>
</tr>
<tr>
<td>GE F440</td>
<td>Slope Stability</td>
<td></td>
</tr>
<tr>
<td>GE F620</td>
<td>Advanced Groundwater Hydrology</td>
<td></td>
</tr>
<tr>
<td>GE F622</td>
<td>Advanced Soil Physics</td>
<td></td>
</tr>
<tr>
<td>GE F624</td>
<td>Stochastic Groundwater Hydrology</td>
<td></td>
</tr>
<tr>
<td>GE F626</td>
<td>Thermal Geotechnics</td>
<td></td>
</tr>
<tr>
<td>GE F635</td>
<td>Advanced Geostatistical Applications</td>
<td></td>
</tr>
<tr>
<td>GE F665</td>
<td>Advanced Geological Materials Engineering</td>
<td></td>
</tr>
<tr>
<td>GE F666</td>
<td>Advanced Engineering Geology</td>
<td></td>
</tr>
<tr>
<td>GE F668</td>
<td>Tunneling Geotechniques</td>
<td></td>
</tr>
<tr>
<td>MIN F621</td>
<td>Advanced Mineral Economics</td>
<td></td>
</tr>
<tr>
<td>MIN F673</td>
<td>Advanced Rock Mechanics</td>
<td></td>
</tr>
<tr>
<td>GE F692</td>
<td>Graduate Seminar</td>
<td>1</td>
</tr>
<tr>
<td>GE F699</td>
<td>Thesis</td>
<td>6</td>
</tr>
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</table>

**Minimum Requirements for Geological Engineering M.S. Degree (Non-thesis Option): 33 credits**

<table>
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<tr>
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<tr>
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</tr>
<tr>
<td>GE F699</td>
<td>Thesis</td>
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</table>

**Non-thesis Geological Engineering Program Requirements**

Complete five from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOS F262</td>
<td>Rocks and Minerals and Ore Deposits and Structure</td>
<td></td>
</tr>
<tr>
<td>GEOS F322</td>
<td>Stratigraphy and Sedimentation and Structural Geology</td>
<td></td>
</tr>
</tbody>
</table>

- Complete the general university requirements. (http://catalog.uaf.edu/graduate/mastersdegrees/#generaluniversityrequirementstext)

- Complete the master’s degree requirements. (http://catalog.uaf.edu/graduate/mastersdegrees/#masterofsciencewiththesisstext)
<table>
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Geological engineering courses and technical electives 11

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GE F692</td>
<td>Graduate Seminar</td>
</tr>
<tr>
<td>GE F698</td>
<td>Non-thesis Research/Project</td>
</tr>
</tbody>
</table>