## Earth Science Education Minor

**(Teacher certification programs)**

25 credits

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ESC 101</td>
<td>Earth Environments</td>
<td>4</td>
</tr>
<tr>
<td>ESC 221</td>
<td>Introduction to Climate Systems</td>
<td>4</td>
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<tr>
<td>ESC 222</td>
<td>Landforms: Processes and Regions</td>
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<tr>
<td>GEO/ESC 422</td>
<td>Meteorology and Weather Forecasting</td>
<td>3-4</td>
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<tr>
<td>GEO/ESC 425</td>
<td>Biogeography</td>
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<td>GEO/ESC 426</td>
<td>Soil Morphology and Genesis</td>
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<td>GEO/ESC 427</td>
<td>Water Resources</td>
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<td>GEO/ESC 250</td>
<td>Maps and GIS</td>
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<td>GEO/ESC 345</td>
<td>Remote Sensing</td>
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<td>GEO/ESC 385</td>
<td>Introduction to Geographic Information System</td>
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<td>GEO/ESC 390</td>
<td>Geographic Field Methods</td>
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<td>GEO/ESC 440</td>
<td>Geographic Interpretation of Aerial Photographs</td>
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<td>ESC 211</td>
<td>Global Warming and Climate Change</td>
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<td>ESC 270</td>
<td>Geographic Themes</td>
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<td>GEO/ESC 422</td>
<td>Meteorology and Weather Forecasting</td>
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<td>GEO/ESC 445</td>
<td>Advanced Remote Sensing</td>
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<td>GEO/ESC 455</td>
<td>Web Mapping</td>
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<td>GEO/ESC 460</td>
<td>Environmental Hazards and Land Use</td>
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<tr>
<td>GEO/ESC 470</td>
<td>Special Topics in Geography/Earth Science</td>
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<td>GEO/ESC 476</td>
<td>Geography/Earth Science Topics for Teachers</td>
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<td>GEO 485</td>
<td>Advanced Geographic Information Science</td>
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<td>GEO 488</td>
<td>Spatial Data Analysis</td>
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<td>GEO/ESC 490</td>
<td>Independent Study</td>
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<td>GEO/ESC 495</td>
<td>Seminar in Geography/Earth Science</td>
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<tr>
<td>GEO/ESC 499</td>
<td>Undergraduate Research</td>
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</table>

**Total Credits**: 25

Teacher certification candidates must also complete GEO 200 Conservation of Global Environments (3 cr.); in addition, early adolescence-adolescence candidates must complete BIO 469 Teaching and Learning Science in the Secondary School (4 cr.); CHM 469 Teaching and Learning Science in the Secondary School (4 cr.); PHY 469 Teaching and Learning Science in the Secondary School (4 cr.) unless a major in biology education, chemistry education, or physics education is completed. Both courses fulfill statutory licensing requirements.

**Note**: The earth science education minor may be used as partial fulfillment of the requirement for a second major in general science education (broad field) major.