# Geospatial and Environmental Analysis Option

## Freshman Year

<table>
<thead>
<tr>
<th>Credits</th>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENSC 110 - Land Resources and Environmental Sciences</td>
<td>3</td>
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</tr>
<tr>
<td>BIOB 170IN - Principles of Biological Diversity</td>
<td>4</td>
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<tr>
<td>CHMY 141 - College Chemistry I</td>
<td>4</td>
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<tr>
<td>CHMY 142 - College Chemistry I Lab</td>
<td>4</td>
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<tr>
<td>WRIT 101W - College Writing I</td>
<td>3</td>
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<tr>
<td>BIOB 160 - Principles of Living Systems</td>
<td>4</td>
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<tr>
<td>CHMY 143 - College Chemistry II</td>
<td>4</td>
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<tr>
<td>CHMY 144 - College Chemistry II Lab</td>
<td>4</td>
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<tr>
<td>M 161Q - Survey of Calculus</td>
<td>4</td>
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<tr>
<td>US Core</td>
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**Year Total:** 14 15

## Sophomore Year

<table>
<thead>
<tr>
<th>Credits</th>
<th>Fall</th>
<th>Spring</th>
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<tbody>
<tr>
<td>ENSC 245IN - Soils</td>
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<tr>
<td>ERTH 101IN - Earth System Sciences</td>
<td>4</td>
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</tr>
<tr>
<td>GPHY 284 - Intro to GIS Science &amp; Cartog</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>STAT 216Q - Introduction to Statistics</td>
<td>3</td>
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<tr>
<td>Univ. Core</td>
<td>3</td>
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<tr>
<td>ENSC 210 - Role of Plants in the Environment</td>
<td>3</td>
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</tr>
<tr>
<td>ENSC 260 - Evolution for Env Scientists</td>
<td>3</td>
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<tr>
<td>WRIT 201 - College Writing II</td>
<td>3</td>
<td></td>
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<tr>
<td>or HONR 202IH - Texts and Critics: Knowledge &amp; Imagination II</td>
<td>3</td>
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<tr>
<td>PHSX 205 - College Physics I</td>
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</table>

**Year Total:** 16 16

## Junior Year

<table>
<thead>
<tr>
<th>Credits</th>
<th>Fall</th>
<th>Spring</th>
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</thead>
<tbody>
<tr>
<td>ENSC 353 - Environmental Biogeochemistry</td>
<td>3</td>
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<tr>
<td>Take one of the following:</td>
<td>3</td>
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<tr>
<td>BIOE 370 - General Ecology</td>
<td>3</td>
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<tr>
<td>NRSM 240 - Natural Resource Ecology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GPHY 357 - GPS Fund/App in Mapping</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Univ. Core</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Directed Elective</td>
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</tr>
<tr>
<td>GPHY 384 - Adv GIS and Spatial Analysis</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENSC 311 - Fundamentals of Environmental Data Analysis</td>
<td>3</td>
<td></td>
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<tr>
<td>Univ. Core</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Directed Electives</td>
<td>6</td>
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</table>

**Year Total:** 15 15

## Senior Year

<table>
<thead>
<tr>
<th>Credits</th>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENSC 444 - Watershed Hydrology</td>
<td>3</td>
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</tbody>
</table>

**Total Program Credits:** 120

## Directed Electives

Each student shall work closely with their faculty advisor to plan an integrated set of elective courses appropriate to their academic, professional and personal goals. Courses not on this list may be used IF considered appropriate to the student’s goals AND approved by the faculty advisor as a curricular exception. Students choosing to take lower level courses (1xx/2xx) for directed electives should be sure they are meeting the university minimum requirement of 42 credits of upper level classes (3xx/4xx) for graduation.

### Choose 17 credits from the following:

<table>
<thead>
<tr>
<th>Credits</th>
<th>Fall</th>
<th>Spring</th>
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</thead>
<tbody>
<tr>
<td>AGSC 401 - Integrated Pest Management</td>
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</tr>
<tr>
<td>AGSC 428 - Cropping Systems and Sustainable Agriculture</td>
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<tr>
<td>BIOE 375 - Ecological Responses to Climate Change</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>BIOE 408 - Rocky Mountain Vegetation</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>BIOE 416 - Alpine Ecology</td>
<td>3</td>
<td></td>
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<tr>
<td>BIOE 421 - Yellowstone Wildlife Ecology</td>
<td>3</td>
<td></td>
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<tr>
<td>BIOE 422 - Insect Ecology</td>
<td>3</td>
<td></td>
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<tr>
<td>BIOE 424 - Ecology of Fungi</td>
<td>3</td>
<td></td>
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<tr>
<td>BIOE 427RN - Research in Freshwater Ecology</td>
<td>3</td>
<td></td>
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<tr>
<td>BIOE 428 - Freshwater Ecology</td>
<td>3</td>
<td></td>
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<tr>
<td>BIOE 439 - Stream Ecology</td>
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<td></td>
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<tr>
<td>BIOE 440R - Conservation Biology</td>
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<tr>
<td>BIOE 455 - Plant Ecology</td>
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<tr>
<td>BIOM 415 - Microbial Diversity, Ecology, and Evolution</td>
<td>3</td>
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<tr>
<td>BIOM 421 - Concepts of Plant Pathology</td>
<td>3</td>
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<tr>
<td>BIOM 423 - Mycology</td>
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<td></td>
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<tr>
<td>BIOM 452 - Soil &amp; Environmental Microbiology</td>
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<tr>
<td>BIOM 465 - Plant-Pathogen Interactions</td>
<td>3</td>
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<tr>
<td>BIOO 433 - Plant Physiology</td>
<td>3</td>
<td></td>
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<tr>
<td>BIOO 435 - Plant Systematics</td>
<td>3</td>
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<tr>
<td>ECNS 332 - Econ of Natural Resources</td>
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<td></td>
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<tr>
<td>ENSC 407 - Environmental Risk Assessment</td>
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<tr>
<td>ENSC 410R - Biodiversity Survey and Monitoring Methods</td>
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<td>ENSC 443 - Weed Ecology and Management</td>
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<tr>
<td>ENSC 445 - Watershed Analysis</td>
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<tr>
<td>ENSC 448 - Stream Restoration Ecology</td>
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<tr>
<td>ENSC 458 - Teaching Applications in LRES</td>
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<tr>
<td>ENSC 460 - Soil Remediation</td>
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<td>ENSC 461 - Restoration Ecology</td>
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<td>ENSC 466 - Chemical Ecology</td>
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<td>Course Code</td>
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<tr>
<td>ENSC 468</td>
<td>Ecosystem Biogeochem and Global Change</td>
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<tr>
<td>ERTH 303</td>
<td>Weather and Climate</td>
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<tr>
<td>ERTH 307</td>
<td>Principles of Geomorphology</td>
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<tr>
<td>ERTH 432R</td>
<td>Surface Water Resources</td>
<td>3</td>
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<tr>
<td>GPHY 121D</td>
<td>Human Geography</td>
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<tr>
<td>GPHY 329</td>
<td>Environment and Society</td>
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<tr>
<td>GPHY 358</td>
<td>GPS Mapping Srvc Learning</td>
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<tr>
<td>GPHY 402</td>
<td>Water and Society</td>
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<tr>
<td>GPHY 411</td>
<td>Biogeography</td>
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<tr>
<td>NRSM 330</td>
<td>Fire Ecology and Mgmt</td>
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<tr>
<td>NRSM 353</td>
<td>Grazing Ecology and Management</td>
<td>3</td>
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<tr>
<td>NRSM 421</td>
<td>Holistic Thought/Mgmt</td>
<td>4</td>
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<tr>
<td>NRSM 455</td>
<td>Riparian Ecology &amp; Management</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 470</td>
<td>Environmental Sociology</td>
<td>3</td>
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<tr>
<td>SRVY 230</td>
<td>Intro to Surveying for Engineers</td>
<td>3</td>
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<tr>
<td>SRVY 375</td>
<td>Analytic Photogrammetry and Remote Sensing</td>
<td>3</td>
</tr>
<tr>
<td>STAT 401</td>
<td>Applied Methods in Statistics</td>
<td>3</td>
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<tr>
<td>STAT 408</td>
<td>Statistical Computing and Graphical Analysis</td>
<td>3</td>
</tr>
<tr>
<td>STAT 411</td>
<td>Methods for Data Analysis I</td>
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</tr>
<tr>
<td>STAT 412</td>
<td>Methods for Data Analysis II</td>
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</tbody>
</table>

Because some of our courses are offered during alternate years, the proposed scheduling of courses in junior and senior years may need to be modified. Work with your advisor for your individual schedule.

**A minimum of 120 credits is required for graduation; at least 42 of these credits must be in courses numbered 300 and above.**