Geographic Information Science, Minor

Geographic information science is the study of geography using digital technology. The field uses geographic information systems (computer-based technologies designed to facilitate the capture, organization, analysis, and display of geographic data), remote sensing (primarily interpretation of satellite imagery), and spatial modeling (viewing, analyzing, and mapping spatial data) to study geographic patterns and processes and to examine research on the nature, development, and use of these tools.

Requirements

The undergraduate minor in geographic information science requires a minimum of 15 s.h. in geographical and sustainability sciences courses, including 12 s.h. in University of Iowa courses numbered 3000 or above. Students must maintain a g.p.a. of at least 2.00 in all courses for the minor and in all UI courses for the minor. Coursework in the minor may not be taken pass/nonpass.

Geography majors may not earn the minor in geographic information science.

The minor requires one core course, three mid-level specialization courses, and an advanced course that builds on one of the three mid-level courses. Students should contact the department secretary to request an advisor for help in selecting the advanced course.

The minor in geographic information science requires the following coursework.

Core Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>One of these:</td>
<td></td>
</tr>
<tr>
<td>GEOG:1050</td>
<td>Foundations of GIS</td>
<td>4</td>
</tr>
<tr>
<td>GEOG:3010/IGPI:3010</td>
<td>Geographic Information Systems and Science</td>
<td>3</td>
</tr>
</tbody>
</table>

Mid-Level Specialization Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All of these:</td>
<td></td>
</tr>
<tr>
<td>GEOG:3500/IGPI:3500</td>
<td>Introduction to Environmental Remote Sensing</td>
<td>3</td>
</tr>
<tr>
<td>GEOG:3520/IGPI:3520</td>
<td>GIS for Environmental Studies</td>
<td>3</td>
</tr>
<tr>
<td>GEOG:3540/IGPI:3540</td>
<td>Introduction to Geographic Visualization</td>
<td>3</td>
</tr>
</tbody>
</table>

Advanced Course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG:3570</td>
<td>Light Detection and Ranging (LiDAR): Principles and Applications</td>
<td>3</td>
</tr>
<tr>
<td>GEOG:4020</td>
<td>Field Methods: Mapping and Mobile Computing</td>
<td></td>
</tr>
<tr>
<td>GEOG:4150/GHS:4150/IGPI:4150</td>
<td>Health and Environment: GIS Applications</td>
<td></td>
</tr>
<tr>
<td>GEOG:4500/IGPI:4500</td>
<td>Applications in Environmental Remote Sensing</td>
<td></td>
</tr>
<tr>
<td>GEOG:4520/IGPI:4520</td>
<td>GIS for Environmental Studies: Applications</td>
<td></td>
</tr>
<tr>
<td>GEOG:4570</td>
<td>Spatial Analysis and Location Models</td>
<td></td>
</tr>
<tr>
<td>GEOG:4580/IGPI:4581</td>
<td>Introduction to Geographic Databases</td>
<td></td>
</tr>
<tr>
<td>GEOG:4650</td>
<td>Simulation in Environmental Geography</td>
<td></td>
</tr>
</tbody>
</table>

Sample Plan of Study

Sample plans represent one way to complete a program of study. Actual course selection and sequence will vary and should be discussed with an academic advisor. For additional sample plans, see MyUI.

Geographic Information Science, Minor

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG:3010 or GEOG:1050</td>
<td>Geographic Information Systems and Science or Foundations of GIS</td>
<td>3 - 4</td>
</tr>
</tbody>
</table>

First Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring</td>
<td>GEOG:3010/IGPI:3010</td>
<td>Geographical Information Systems</td>
</tr>
</tbody>
</table>

Second Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>GEOG:3520</td>
<td>GIS for Environmental Studies</td>
</tr>
<tr>
<td>Spring</td>
<td>GEOG:3540</td>
<td>Introduction to Geographic Visualization</td>
</tr>
</tbody>
</table>

Third Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>GEOG:3500</td>
<td>Introduction to Environmental Remote Sensing</td>
</tr>
</tbody>
</table>
**Fourth Year**

**Fall**

<table>
<thead>
<tr>
<th>Minor: GIS advanced course a</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours</td>
<td>3</td>
</tr>
<tr>
<td>Total Hours</td>
<td>15-16</td>
</tr>
</tbody>
</table>

a Refer to the General Catalog for a list of recommended courses.