Geography: Spatial Analysis (Bachelor of Science)

Spatial Analysis Major
Requires 121 Total Credit Hours; 33 Major Credit Hours

GENERAL EDUCATION
College of Arts & Sciences Bachelor of Science general education requirements apply.
Please visit https://artsandsciences.osu.edu/academics/current-students/advising/ge

MAJOR REQUIREMENTS
NOTE: Several major courses are offered only one term per year. Careful schedule planning is required to complete course sequences in a timely manner.

Required Prerequisites to Courses in the Major (should be completed as soon as possible)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSE 1114</td>
<td>Intro to Databases Using MS Access</td>
<td>1.5</td>
</tr>
<tr>
<td>STAT 1450 OR STAT 2450</td>
<td>Intro to the Practice of Statistics OR Introduction to Statistical Analysis I</td>
<td>3</td>
</tr>
</tbody>
</table>

Prerequisites are course specific. There are no prerequisites that must be completed before declaring to the major.

Required Courses (6 courses/18 hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
<th>Required Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 4103 *</td>
<td>Introductory Spatial Data Analysis (previously GEOG 5100)</td>
<td>3</td>
<td>Math 1116 or above</td>
</tr>
<tr>
<td>GEOG 5200(S)</td>
<td>Cartography and Map Design</td>
<td>3</td>
<td>None</td>
</tr>
<tr>
<td>GEOG 5201 **</td>
<td>GeoVisualization</td>
<td>3</td>
<td>GEOG 5200</td>
</tr>
<tr>
<td>GEOG 5210</td>
<td>Fundamentals of Geographic Information Systems</td>
<td>3</td>
<td>None</td>
</tr>
<tr>
<td>GEOG 5212 * **</td>
<td>Geospatial Databases for GIS</td>
<td>3</td>
<td>GEOG 5210 &amp; CSE 1114</td>
</tr>
<tr>
<td>GEOG 4101</td>
<td>Undergraduate Research &amp; Professionalization Seminar</td>
<td>3</td>
<td>12 hours in major</td>
</tr>
</tbody>
</table>

* Prerequisite course required to enroll.
** Part of major course sequence. Major course(s) must be completed with a “C-” or better as prerequisite to enroll.

Elective Courses
Choose five of the following courses (15 hours).
One must be a physical or human geography course (denoted with ***)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
<th>Required Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 5103 *</td>
<td>Intermediate Spatial Data Analysis</td>
<td>3</td>
<td>GEOG 4103 Not open to students w/GEOG 5100</td>
</tr>
<tr>
<td>GEOG 5222 * **</td>
<td>GIS Algorithms and Programming</td>
<td>3</td>
<td>GEOG 5212</td>
</tr>
<tr>
<td>GEOG 5223 **</td>
<td>Design and Implementation of GIS</td>
<td>3</td>
<td>GEOG 5222</td>
</tr>
<tr>
<td>GEOG 5225</td>
<td>Geographic Applications of Remote Sensing</td>
<td>3</td>
<td>None</td>
</tr>
<tr>
<td>GEOG 5226</td>
<td>Spatial Simulation and Modeling in GIS</td>
<td>3</td>
<td>None</td>
</tr>
<tr>
<td>GEOG 5229 * **</td>
<td>Emerging Topics in GIS</td>
<td>3</td>
<td>GEOG 5210</td>
</tr>
<tr>
<td>GEOG 5300</td>
<td>Geography of Transportation ***</td>
<td>3</td>
<td>None</td>
</tr>
<tr>
<td>GEOG 5402</td>
<td>Land Use Geography</td>
<td>3</td>
<td>None</td>
</tr>
<tr>
<td>Choice</td>
<td>Any 3000 to 5000-level human geography course ***</td>
<td>3</td>
<td>None</td>
</tr>
<tr>
<td>Choice</td>
<td>Any 3000 to 5000-level physical geography course ***</td>
<td>3</td>
<td>None</td>
</tr>
<tr>
<td>CSE 2122 OR CSE 2123 *</td>
<td>Data Structures Using C++ OR Data Structures Using Java</td>
<td>3</td>
<td>CSE 1222 OR CSE 1223</td>
</tr>
</tbody>
</table>

* Prerequisite course required to enroll.
**Major Requirements**

The following requirements for the major apply to all Arts and Sciences degrees.

**Major requirements comprise at least 30 semester hours and can be substantially higher.** Major courses must be at the 2000 level or above. At least 20 hours of the major must be in courses offered by the department of the major. Note: Some interdisciplinary majors are excluded from the 20-hour rule.

**Students must earn at least a C- in a course for the course to be applied to the major.** However, students must receive a 2.0 cumulative grade point average (GPA) for all major course work. If a D+, D, or an E is earned in a course needed for the major, the course cannot be counted on the major. The major advisor will decide if the course should be repeated or if another course should be substituted. Courses taken on a pass/non-pass basis cannot be used on the major.

**The department must approve all courses in the major.** Some departments require a “major program form,” a document that must be signed by the academic advisor and submitted with the graduation application. Some departments do not require such a form because the academic advisors use an automated version on the degree audit report. Some departments require both. In any case, students should meet with the academic advisor early to plan the major; during your meeting, it can be determined whether the department requires a paper major program form. Any changes or adjustments to the major should be made in consultation with the academic advisor.

**If a student transferred from another institution, no more than half of the credit hours on the major program may consist of transfer credit.** The academic advisor, the chairperson of the department, and the appropriate assistant dean must approve any request for a variation in this policy.

**For Honors students, the GE curriculum and major must be approved by the assigned Honors advisor.** Information about the honors curriculum and requirements and how to schedule an appointment with an honors advisor is available on the College of Arts and Sciences Honors Program website: http://aschonors.osu.edu/advising. Students will also be assigned a faculty advisor in the department of study to help the student choose courses and co-curricular opportunities that align with academic and professional goals.

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**For more information about internship and career opportunities, visit the College of Arts and Sciences Career Services Office.** Their website is http://asccareerservices.osu.edu/. 