In addition to offering the Geography major, the department coordinates an Individualized Curriculum Program (ICP) in Spatial Information Systems that combines courses in Geography and Computer Science and Information Systems, which leads to a Bachelor of Applied Science degree. A foreign language is not required to complete this degree.

The program is focused on three areas:

- Geography
- Computer Science and Information Systems
- specialty electives

Required GEOG and CSIS courses are specified on the Curriculum Sheet.

### Learning Outcomes

Spatial Information Systems majors, upon fulfilling the requirements of the major will:

- Demonstrate understanding of spatial patterns and processes in the human and physical environments.
- Demonstrate proficiency in one or more applications of geospatial technology – Geographic Information Systems, Global Positioning Systems and/or Remote Sensing.
- Complete a research proposal that requires synthesis relevant literature and development of a viable geographic research project.

Total hours required for the SIS ICP degree is 124 s.h. of which at least 48 s.h. must be at the 3000-level or higher. No minor or foreign language is required for this degree.

### Required Courses

#### Required Geography Core Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 3701</td>
<td>Introduction to Geographic Information Science</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 3702</td>
<td>Introduction to Remote Sensing</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 4801</td>
<td>Advanced Geographic Information Science</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 5812</td>
<td>Global Positioning Systems and GIScience</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Required Geospatial Core Courses

<table>
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<td>GEOG 5812</td>
<td>Global Positioning Systems and GIScience</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Required Complementary Skill Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DDT 1505</td>
<td>CAD Technology 1</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 3743</td>
<td>Professional and Technical Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Required CSIS Core Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>S.H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSIS 1590</td>
<td>Survey of Computer Science and Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>CSIS 2610</td>
<td>Programming and Problem-Solving</td>
<td>4</td>
</tr>
<tr>
<td>CSIS 3726</td>
<td>Visual/Object-Oriented Programming</td>
<td>4</td>
</tr>
<tr>
<td>CSIS 3722</td>
<td>Development of Databases</td>
<td>3</td>
</tr>
</tbody>
</table>

Select at least 6 s.h. from the following CSIS/CSCI Info elective courses: 6-8

- CSIS 3760 | Electronic Commerce Programming                     | 3    |
- CSIS 4822 | Database Applications                                | 3    |
- CSIS 5824 | Applied Artificial Intelligence                     | 3    |
- CSIS 5838 | Graphics and Animation for Gaming                   | 3    |
- CSCI 5895 | Special Topics (with approval of the chairperson)    | 3    |
- INFO 3774 | Multimedia Technology                                | 3    |
- INFO 3775 | Multimedia Authoring                                | 3    |

Select at least 6 s.h. from the following GEOG elective courses with approval of the chairperson: 6

- GEOG 3712 | Thematic Map Design and Symbolization                | 3    |
- GEOG 3726 | Urban Geography                                      | 3    |
- GEOG 3737 | Soils and Land Use                                   | 3    |
- GEOG 3741 | Transportation Geography                             | 3    |
- GEOG 3775 | Field Methods in Geography                           | 3    |
- GEOG 4825 | Geography Internship                                 | 3    |
- GEOG 4840 | Seminar in Geography                                 | 3    |
- GEOG 5806 | Directed Research in Geography                       | 3    |
- GEOG 5820 | Directed Research in Geography                       | 3    |

### Electives

Select a minimum of 23 hours of outside electives. 23

### Suggested (but not limited to) Courses

Select an additional 8-10 hours from the following: 8-10

- ANTH 3702 | Archaeology (Prerequisite ANTH 1500 or ANTH 1503)   | 3    |
- ANTH 3778 | Archaeological Techniques (Prerequisite ANTH 3702)   | 3    |
- ANTH 4825 | New World Archaeology: Topics (Prerequisite ANTH 3702) | 3    |
- ANTH 4890 | Advanced Topics in Archaeology (Prerequisite ANTH 3702) | 3    |
- BIOL 3780 | General Ecology (Prerequisite BIOL 2602)             | 3    |
- DDT 2606 | CAD Solid Modeling (Prerequisite CCT 1503 or DDT 1505) | 3    |
- DDT 2607 | Civil 3D (Prerequisite DDT 1503 or DDT 1505)         | 3    |
- GEOL 3706 | Geology of Economic Mineral Deposits (Prerequisite GEOL 1505 or GEOL 2605) | 3    |
- GEOL 5815 | Geology and the Environment 2 (Prerequisite GEOL 2015 or ENST 2600) | 3    |

Total Semester Hours 120-125

1. Suggested courses may be taken with approval of the department.
2. Required courses may be taken with approval of the department.
Courses taken under this section allow the SIS major to choose areas of application appropriate to his/her field of interest. Or it may allow further development of the student in a direction of her/his choice, such as environmental studies, biological sciences, archeology, or drafting and design. The choice is left open for the student in consultation and with approval of the faculty members overseeing the ICP. Some suggested elective courses are listed but the student may also select additional courses from the GEOG and computer elective listings above. Be aware that selected courses may require prerequisites (in parentheses).

Summary:

GER hours: 40 s.h.
Total GEOG hours: 30 s.h.
Total CSIS/INFO hours: 20-22 s.h.
Total complementary skill hours: 6 s.h.
Outside elective hours: 18 s.h.
Additional hours: 8-10 s.h.