

# SPATIAL INFORMATION SYSTEMS (SIS) INDIVIDUALIZED CURRICULUM PROGRAM (ICP)

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.

COURSE	TITLE	S.H.
<b>FIRST YEAR REQUIREMENT -STUDENT SUCCESS</b>		
YSU 1500	Success Seminar	1-2
or SS 1500	Strong Start Success Seminar	
or HONR 1500	Intro to Honors	
<b>General Education Requirements</b>		
ENGL 1550	Writing 1	3
ENGL 1551	Writing 2	3
CMST 1545	Communication Foundations	3
Mathematics Requirement		3
Arts and Humanities courses		6
Natural Science		4
GEOG 1503 meets 3 s.h. of Natural Science Requirement		
Social Science		3
GEOG 2626 or GEOG 2640 meet 3 s.h. of the Social Science		
Social and Personal Awareness		6
<b>Required Geography Core Courses</b>		
GEOG 1503	Physical Geography	3
GEOG 4890	Geography Capstone	3
GEOG 2610	Map Use and Interpretation	3
or GEOG 2611	Geospatial Foundations	
GEOG 2626	World Geography	3
or GEOG 2640	Human Geography	

### Required Geospatial Core Courses

GEOG 3701	Introduction to Geographic Information Science	3
GEOG 3702	Introduction to Remote Sensing	3
GEOG 4801	Advanced Geographic Information Science	3
GEOG 5812	Global Positioning Systems and GIScience	3

### Required Complementary Skill Courses

DDT 1505	CAD Technology 1	4
ENGL 3743	Professional and Technical Writing	3

### Required CSIS Core Courses

CSIS 1590	Survey of Computer Science and Information Systems	3
CSIS 2610	Programming and Problem-Solving	4
CSIS 3726	Visual/Object-Oriented Programming	4
CSIS 3722	Development of Databases	3

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

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

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	
GEOG 3726	Urban Geography	
GEOG 3737	Soils and Land Use	
GEOG 3741	Transportation Geography	
GEOG 3775	Field Methods in Geography	
GEOG 4825	Geography Internship	
GEOG 4840	Seminar in Geography	
GEOG 5806		
GEOG 5820	Directed Research in Geography	

### Electives

Select a minimum of 23 hours of outside electives. <sup>1</sup> 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)	
ANTH 3778	Archaeological Techniques (Prerequisite ANTH 3702)	
ANTH 4825	New World Archaeology: Topics (Prerequisite ANTH 3702)	
ANTH 4890	Advanced Topics in Archaeology (Prerequisite ANTH 3702)	
BIOL 3780	General Ecology (Prerequisite BIOL 2602)	
DDT 2606	CAD Solid Modeling (Prerequisite CCT 1503 or DDT 1505)	
DDT 2607	Civil 3D (Prerequisite DDT 1503 or DDT 1505)	
GEOG 3706	Geology of Economic Mineral Deposits (Prerequisite GEOL 1505 or GEOL 2605)	
GEOL 5815	Geology and the Environment 2 (Prerequisite GEOL 2615 or ENST 2600)	

**Total Semester Hours**

**120-125**

## 2 Spatial Information Systems (SIS) Individualized Curriculum Program (ICP)

<sup>1</sup> 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.