



## Geography Major – Bachelor of Science in Geographic Information Science (BS-GIS)

Minimum of 56 credit hours in Geography required for major, 183 credit hours required for the degree

### 1. Geography core required courses (28 credit hours):

One of the following 3-course (SI-Natural) sequences:

GEOG 1201, 1202, 1203 Environmental Systems	12 qtr hrs	Fall, Winter, Spring
GEOG 1216, 1217, 1218 Our Dynamic Earth	12 qtr hrs	Fall, Winter, Spring
GEOG 1264, 1265, 1266 Global Environmental Change	12 qtr hrs	Fall, Winter, Spring
GEOG 1410 People, Places, and Landscapes (SI-Social)	4 qtr hrs	Fall, Winter, Spring
GEOG 2020 Cartography	4 qtr hrs	Fall, Winter
GEOG 2100 Introduction to GIS	4 qtr hrs	Fall, Winter, Spring
GEOG 2000 Geographical Statistics	4 qtr hrs	Winter, Spring
GEOG 2990 Professional Development for Geography & Environmental Science	0 qtr hrs	Spring

Note: GEOG 1410, 1201-03, 1216-18, 1264-66 classes can count towards Common Curriculum requirements

### 2. GIScience Core required courses (16 credit hours):

GEOG 3010 Geographic Information Analysis	4 qtr hrs	Spring
GEOG 3140 GIS Database Design	4 qtr hrs	Fall
GEOG 3200 Remote Sensing	4 qtr hrs	Fall, Winter, Spring
GEOG 3130 GIS Programming with Python	4 qtr hrs	Winter

**3. Experiential Learning Experience (0-4 credit hours):** In addition to more traditional coursework, students are required to complete at least one of the following options for extended experiential, hands-on learning opportunities:

GEOG 3710 Applied Geospatial Analysis	4 qtr hrs	Spring
-OR- GEOG 3991 Independent Study	0-4 qtr hrs	Variable
-OR- GEOG 3999 Internship	0-4 qtr hrs	Variable

**4. Geography Electives (12 credit hours):** A minimum of 12-quarter hours of 2000- or 3000-level elective courses in geography must be completed, include one physical (P) and one human (H) course. (See **Appendix I**)

**5. Required Minors:** In addition to major course work, two minors are required for the BS degree. The first minor must be in either computer science or mathematics (**20 credit hours**); additionally, students are required to complete a minimum of two courses (**8 credit hours**) in the cognate subject – see track **A** and **B** below for details.

The second minor (**20-25 credit hours**) can be in any discipline other than geography. Students are encouraged to work with their advisor to identify a minor that complements their interests.

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#### Track A: Computer Science Minor

COMP 1671 Introduction to Computer Science I	<i>Additional required courses in mathematics:</i>
COMP 1672 Introduction to Computer Science II	MATH 1951 Calculus (AI-Natural)
COMP 2673 Introduction to Computer Science III	MATH 2060 Elements of Linear Algebra
COMP 2300 Discrete Structures in Computer Science	
COMP 2370* Introduction to Algorithms and Data Structures -*OR -other (2000- or 3000-level) computer sci elective	

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#### Track B: Mathematics Minor

MATH 1951 Calculus I (AI-Natural)	<i>Additional required courses in computer science:</i>
MATH 1952 Calculus II	COMP 1671 Intro to Computer Science I
MATH 1953 Calculus III	COMP 1672 Intro to Computer Science II
MATH 2060 Elements of Linear Algebra	
MATH 3311 Linear Programming	

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## 6. University Common Curriculum (32-40 additional credits):

First Year Seminar	4 qtr hrs	Fall
First Year Writing & Rhetoric	8 qtr hrs	Winter, Spring
Foreign Language	4-12 qtr hrs	Fall, Winter, Spring
Analytical Inquiry-Natural*	4 qtr hrs	Variable
Analytical Inquiry-Society	8 qtr hrs	Variable
Scientific Inquiry-Natural*	12 qtr hrs	Variable
Scientific Inquiry-Society*	8 qtr hrs	Variable
Advanced Seminar	4 qtr hrs	Variable

\*The following credits will be fulfilled through completion of major and/or minor course requirements:  
*AI-Natural (4 credit hours), SI-Natural (12 credit hours), SI-Society (4 credit hours).*

**Appendix I. Geography Electives (12+ quarter hours)** A minimum of 12-quarter hours (2000- or 3000-level of elective course must be taken from the following list of courses, and must include one physical (P) and one human (H) course. Additional GIScience (G) courses and/or other Geography courses not listed here may count towards elective credits. Grades must be C- or above.

GEOG 2030	H/P	Field Methods+	GEOG 3510	P	Biogeography *
GEOG 2401	H	The Human Population #	GEOG 3520	P	Geography of Soils *
GEOG 2410	H	Economic Geography *	GEOG 3560	P	Fluvial Geomorphology *
GEOG 2420	H	Geography of Tourism *	GEOG 3600	P	Meteorology *
GEOG 2430	H	World Cities +	GEOG 3610	P	Climatology *
GEOG 2500	H/P	Sustainability and Human Society #	GEOG 3630	P	Dendroclimatology *
GEOG 2550	H/P	Current Issues in Sustainability #	GEOG 3720	H/P	Mountain Environments & Sustainability *
GEOG 2700	H/P	Contemporary Environmental Issues #	GEOG 3750	H/P	Topics in Human/Environment Interactions +
GEOG 2750	P	Paleoenvironmental Field Methods #	GEOG 3755	H	Geography of Health #
GEOG 2810	H/P	Geography of Latin America *	GEOG 3800	H/P	Geography of Colorado *
GEOG 2850	H/P	Geography of Europe +	GEOG 3830	P	Natural Resource Analysis & Planning +
GEOG 3000	G	Advanced Geographic Statistics #	GEOG 3870	H/P	Water Resources and Sustainability *
GEOG 3110	G	GIS Modeling +	GEOG 3890	H/P	Ecological Economics *
GEOG 3160	G	Web GIS #	GEOG 3920	G	Remote Sensing Seminar +
GEOG 3230	G	Advanced Remote Sensing *	GEOG 3955	P	Pollen Analysis Seminar *
GEOG 3300	H	Cultural Geography +	<b><u>ENVI and GEOL courses</u></b>		
GEOG 3310	H/P	Culture/Nature/Econ-Human Ecology #	ENVI 2660	P	Natural History – Sonora & Baja #
GEOG 3340	H/P	Geographies of Migration +	ENVI 3000	H/P	Environmental Law #
GEOG 3350	H	Qualitative Methods in Geography *	ENVI 3550	H/P	Environmental Issues – Colorado +
GEOG 3400	H	Urban Landscapes #	GEOL 2020	P	Historical Geology *
GEOG 3410	H/G	Urban Applications of GIS *	GEOL 2400	P	Geology and Ecology of the SW #
GEOG 3420	H	Urban & Regional Planning #	GEOL 2800	P	Geology of National Parks +
GEOG 3425	H	Urban Sustainability *	GEOL 3010	P	Process Geomorphology (GEOG 3910) *
GEOG 3440	H	Urban Transportation Planning *	GEOL 3100	P	Environmental Geology *
GEOG 3445	H	Sustainability and Transportation *	GEOL 3520	P	Erosion Process and Management +
GEOG 3500	P	Reconstructing Quaternary Environments*	GEOL 3540	P	Hydrology *

# = offered every year \* = offered every other year + = offered occasionally

**Notes:** Other Geography courses not listed here may count towards elective credits. Grades must be C- or above. No more than 5 quarter hours taken as Independent Study or Independent Research will be counted towards the minimum hours required in the major. Students majoring in Geography may not also major in Environmental Science.