

**DEPARTMENT OF GEOGRAPHY**  
**REQUIREMENTS FOR THE MAJOR – GEOGRAPHIC INFORMATION SCIENCE (GIS)**

Students must complete a minimum of six (6) courses of Geographic Core required coursework, plus eight (8) required Applied GIS courses and two (2) required Remote Sensing courses, plus one (1) Geographic CW course, plus one (1) Senior Capstone course, plus one (1) GIS elective course, as well as three (3) required Allied STEM courses for a minimum total of twenty-two (22) required GIS major courses (see list below). All courses for the major must be taken for a letter grade and completed with a C or better.

**RESIDENCY REQUIREMENT:** Students must complete at least 30 credit hours in the Department of Geography at the University of Utah.

**ALLIED CREDIT REQUIREMENT:** One extra allied course is also required. These courses will generally be in the student’s interest/specialization area and can be done in any of the following departments: Atmospheric Sciences; Biology; Chemistry; City and Metropolitan Planning; Civil Engineering; Computer Science; Geology; Math; Parks, Recreation and Tourism; Philosophy; Physics; or any department\*\* in the College of Social and Behavioral Science. \*\*(Aerospace Studies, Anthropology, Economics, Environmental and Sustainability Studies, Ethnic Studies, Family and Consumer Studies, Gender Studies, Health Society and Policy, Military Science, Naval Science, Political Science, Psychology, Sociology).

**PROGRAM OF STUDY**

Code	Course Number and Title	Credit Hrs	Sem/Year Taken	Grade
	<b>Required Courses: (Initial Core Requirements)</b>			
SF	GEOG 1000 – Earth Environments and Global Change	3		
BF	GEOG 1400 – Human Geography	3		
SF	GEOG 1100 – Exploring the World Through Google Earth	3		
	GEOG 1180 – Introduction to Geo-Programming (hybrid – Fall or Spring)	3		
QB/QI	GEOG 3020 – Geographical Analysis (Spring)	4		
QI	GEOG 3100 – Intro to GIS & Cartography (Fall / +online Spring or Summer)	5		
	<b>One of the following: (Geography CW Choice List)</b>			
CW	GEOG 3/5270 – Biogeography: Global Patterns of Life (Spring) <b>OR</b>	4		
CW	GEOG 3/5400 – Population Geography (Fall)	4		
	<b>Required Allied Courses: (Allied Requirements)</b>			
	CS 1030 – Foundations of Computer Science	3		
QR	MATH 1210 – Calculus I	4		
SF	PHYS 1010 – Elementary Physics <b>OR</b> PHYS 2010 – General Physics I	3-4		
	Allied Elective (see options above)	2		
	<b>Applied GIS Core: (Applied GIS Requirements)</b>			
	GEOG 3/5170 – GeoData Field Methods (Fall)	3		
	GEOG 5140 – Methods in GIS	4		
	GEOG 5150 – Spatial Data Design (Fall)	4		
	GEOG 5160 – Spatial Modeling with GIS (Spring)	4		
	GEOG 5162 – Project Management	3		
	GEOG 5165 – Web GIS	3		
	GEOG 5180 – Geo-processing with Python (Fall)	3		
	GEOG 5680 – Introduction to R	2		
	<b>Remote Sensing Core: (Remote Sensing Requirements)</b>			
SF	GEOG 3110 – The Earth from Space: Remote Sensing of the Env’t (Fall)	3		
	GEOG 5110 – Environmental Analysis through Remote Sensing (Spring)	3		
	<b>Senior Capstone: (required core course for major in final year)</b>			
	GEOG 5161 – Capstone in Geographic Information Science (Spring)	3		
	<b>Electives: (select at least one elective course from list)</b>			
	GEOG 5120 – Environmental Optics	3		
	GEOG 5130 – Advanced Remote Sensing Applications	3		
	GEOG 5190 – GIS for Environmental and Public Health	3		
	GEOG 5670 – Open Source Geospatial Tools	3		
	GEOG 5940 – Internship in GIS/Remote Sensing	3-5		
	<b>TOTAL COURSES 22, TOTAL CREDIT HOURS 75-78</b>			
	<b>TOTAL RESIDENCY HRS. (30 cr. hrs. at U of U Geog. Dept.)</b>			

\*GEOG 5940 Internship in GIS/RS may be counted only once toward the major elective requirement and must be approved by GIS Director.