

## CERTIFICATE PROGRAM IN GEOGRAPHIC INFORMATION SCIENCE

Department of Geography  
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### SUMMARY

Geographic information science (GIS) involves the theory and methodology behind capturing, storing, analyzing and communicating digital information about the Earth and phenomena distributed on or near its surface. From its initial home in the discipline in geography, GIS has diffused to many fields concerned with geographic phenomena. Career opportunities in GIS continue to expand both locally and nationally.

### OVERVIEW

Geographic information science (GIS) involves the theory and methodology of capturing, storing analyzing and communicating digital information about the physical and socioeconomic phenomena distributed on or near the Earth's surface. GIS software has become very powerful, enabling the application of GIS tools in domains ranging from physical to social sciences and from basic research to applied problem solving. GIS professionals work in a variety of settings, including the private sector (e.g., logistics, market analysis, facilities management), public sector at the local, state and national levels and in GIS software firms.

The local and national job markets for GIS professionals are very strong and are not expected to weaken in the foreseeable future. The University of Utah's GIS education program has been successful in placing undergraduate and graduate students in these employment arenas.

### Track in Applied GIS

#### Objectives

The outcome of this track is an individual trained in the skills required for solving common applications of GIS and related geocomputational techniques. This certificate combines skills and knowledge of four domains: i) substantive geography and basic geospatial analytical techniques from the undergraduate degree in geography; ii) GIS skills obtained through specialized GIS coursework; iii) basic software skills for solving computational problems in science and engineering, and iv) synthesizing GIS learning through completion of a real-world project.

#### Program requirements

C or better in the following courses:

Course Number	Title	Credit Hours
GEOG 1180 <b>OR</b> COMP 1010	Introduction to Geo-Programming ( <i>f</i> ) <b>OR</b> Programming for All 1 ( <i>F/S</i> )	3.0 3.0
GEOG 3100	Introduction to GIS and Cartography ( <i>F/S</i> )	5.0
GEOG 4140	Advanced Methods in GIS ( <i>F/S</i> )	4.0
GEOG 3170	Geospatial Field Methods: GPS and Drones ( <i>Fall and Spring Break</i> )	3.0
GEOG 5940 <b>OR</b> GEOG 5150&5161	Internship in GIS ( <i>any</i> ) <b>OR</b> Geospatial Big Data ( <i>F</i> ) <b>AND</b> Capstone in GIS ( <i>S</i> )	3.0-5.0 4.0 & 3.0
<b>Total Credit Hours</b>		18-22

## Track in Remote Sensing

### Objectives

The outcome of this track is an individual trained in the skills required for solving common applications of remote sensing and related geocomputational techniques. This certificate combines skills and knowledge of four domains: i) substantive geography and basic geospatial analytical techniques from the undergraduate degree in geography; ii) specialized remote sensing analysis skills, not available through the Applied GIS emphasis, obtained through advanced remote sensing coursework; iii) basic software skills for solving computational problems in science and engineering; and, iv) synthesizing Remote Sensing learning through completion of a real-world project.

### Program requirements

C or better in the following courses:

Course Number	Title	Credit Hours
GEOG 1180 <b>OR</b> COMP 1010	Introduction to Geo-Programming ( <i>f</i> ) <b>OR</b> Programming for All 1 ( <i>F/S</i> )	3.0
GEOG 3100	Introduction to GIS and Cartography ( <i>F/S</i> )	5.0
GEOG 3110	Introduction of Remote Sensing ( <i>F</i> )	3.0
GEOG 3170	Geospatial Field Methods: GPS and Drones ( <i>Fall or Spring Break</i> )	3.0
GEOG 5110	Environmental Analysis Through Remote Sensing ( <i>S</i> )	3.0
GEOG 5120 <b>OR</b> GEOG 5130	Advanced Optical Remote Sensing ( <i>F</i> ) Advanced Active Remote Sensing ( <i>S</i> )	3.0 3.0
GEOG 5131 <b>OR</b> GEOG 5940	Capstone in Remote Sensing ( <i>S</i> ) Internship in Remote Sensing ( <i>any</i> )	3.0 3.0-5.0
<b>Total Credit Hours</b>		23