B.A. in Geography with a Certificate in GIS and Remote Sensing

Students majoring in Geography may obtain a Certificate in GIScience and Remote Sensing.

The requirements of the Certificate are:

- A minimum of 17 credit hours including four required courses and at least two electives.
  - Four Required courses: Geog. 150/149; Geog 350; Geog/Geol 455. (11 Credit Hours)
  - Electives: at least two additional courses from the following list: Geog 300, 452, 453, 454, 462, 463, 494 see below. (6 Credit Hours)
- GIS/Remote Sensing Track (identified on transcript as Area of Emphasis)
- Geography major GPA of 2.0 or greater.
- See Dr. Elmes to register

**GEOG 150/149. Digital Earth and Lab.** (Dr. Conley) Fall. 4 hrs. This class surveys key concepts of geospatial technologies (GIS, remote sensing, spatial analysis) in the context of social and environmental change.

**GEOG 300 Geographical Data Analysis** (Dr. Conley) Fall. 3 hrs. Quantitative techniques for collection, classification, and spatial analysis of geographical data with emphasis on map analysis and application of spatial statistics.

**GEOG. 350 Introduction to Geographic Information Science.** (Dr. Elmes) Fall & Spring. 4 hr. lecture and lab. Prerequisite: Geog 150 or Consent. Geographic Information Systems (GIS) in principle and practice spatial data handling in a computer environment: data analysis, production and display for planning and decision-making.

**GEOG. 452 Geographic Informational Science: Applications.** (Dr. Harris) Spring. 3 hrs. Prerequisite: Geog. 350 or 550. Operational, management and functional issues in the development and application of GIS for analysis, locational decision making and project design.

**GEOG. 453 Geographic Information System Design and Implementation.** (Dr. Conley) Spring 3 hrs. Prerequisite: GEOG/GEOL 350. Geographic database design and implementation using contemporary vector software.

**GEOG 454. Environmental GIS.** 3 Hours. Provides background and hands-on experience needed to answer scientific questions about the environment within a raster-based GIS framework. Students should have introductory-level GIS background.

**GEOG 455 Introduction to Remote Sensing** (Dr. Warner) Fall 2 hr. lec. 1 hr. lab. Theory, technology and applications of photo-interpretation and digital image analysis of aerial photography and multispectral images.

**GEOG 456/656 Remote Sensing Applications** (Dr. Warner) Spring. 3 hours. A survey of the applications of remote sensing applications in different fields, including geology, soils, forestry, agriculture, and urban mapping.

**GEOG. 462. Digital Cartography.** (Dr. Elmes) Fall 3 hrs. Computer-assisted mapping emphasizing the appropriate uses of software in thematic and topographic map design, annotation, symbolization, color, design, display and reproduction.

**GEOG 463 Crime Geography: Concepts, Mapping and Analysis.** (Dr. Elmes) Spring 3 hrs. PR: GEOG150 or GEOG 350. Exploring the interactions between crime, society, and space through GIS, mapping, and geographical concepts of crime and law enforcement.

**GEOG 494 Geovisualization & the Cave** (Dr. Harris) Fall 3 hours seminar

**GEOG494 Immersive Geographies** (Dr. Harris) Spring 3 hours seminar