

Career Opportunities

- **Surveying and cartography:** surveyors, cartographers, photogrammetrists, and mapping technicians
- **Environmental resource management:** environmental scientists, specialists, and health specialists
- **Urban and regional planning:** architects, engineers, local government, and GIS analysts
- **Cultural and society:** policy consultant, GIS scientists
- **IT industry:** application developer, database administrator, project manager

GISc Minor Requirements

- **REQUIRED COURSES:**

GEOG 2100 Introduction to Geographic Information Systems (Fall, Winter, Spring, Summer)

GEOG 3200 Remote Sensing (Fall, Winter, Spring)

- **ELECTIVES:**

In addition to the required courses, the following courses are offered every year:

GEOG 2000 Geographic Statistics (Winter, Spring)

GEOG 2020 Computer Cartography (Fall, Winter)

GEOG 3010 Geographic Information Analysis (Spring, Prerequisite: GEOG2100)

GEOG 3130 Advanced Geographic Information Systems (Winter, Prerequisite: GEOG2100)

GEOG 3140 GIS Database Design (Fall, Prerequisite: GEOG2100)

GEOG 3160 Web GIS (Fall, Prerequisite: GEOG3130)

GEOG 3170 Geospatial Analysis Project (Spring, Prerequisite: Instructor Approval)

GEOG 3230 Advanced Remote Sensing (Fall, Prerequisite: GEOG3200)

GEOG 3920 Remote Sensing Seminar (Prerequisite: GEOG2100/GEOG3200)

The following courses are offered every other year:

GEOG 3110 GIS Modeling

GEOG 3410 Urban Applications in GIS (Prerequisite: GEOG2100)

GEOG 3470 GIS and Environmental Health Geography

GEOG 3701 Topics in Geographic Information Science

GEOG 3860 GIS Application in Natural Resources

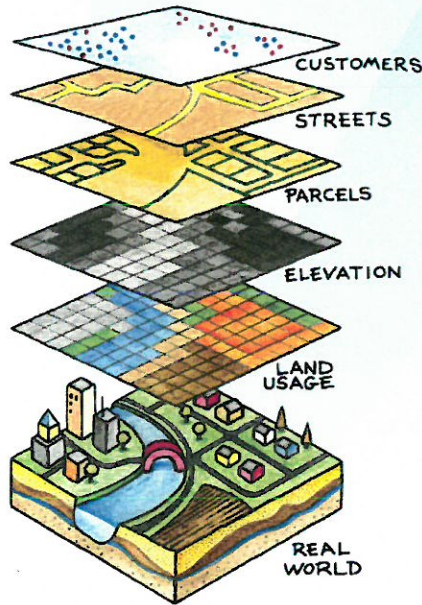
- **INTERNSHIP AND DIRECTED STUDY:**

Credit hours received from GIS internship or directed study may be counted towards the minor.

Note:

Geography majors may emphasize GISc as part of their degree program. They are not eligible to complete the minor in GISc.





GIScience courses for Winter 2020

GEOG 2020 Computer Cartography

Class time: Tuesday: 14:00-17:30 and Thursday: 14:00-15:30

Description: Basic map design and execution using existing maps. Topics include map projections, symbolizing quantitative data, use of space, layout, compilation, verbal content, and the use of computer technology in design and production of maps.

GEOG 2100 Introduction to Geographic Information Systems (GIS)

Class time: Tuesday: 10:00-11:30 and Thursday: 10:00-13:30

Description: Overview of GIS, including background, development, trends, and prospects in this technological field; software package and hands-on exercises used to examine basic geographic concepts and spatial data characteristics associated with automated mapping, projections, scales, geocoding, coordinate referencing, and data structures for computerized land-based data bases.

GEOG 3120 Environmental/GIS Modeling

Class time: Tuesday and Thursday: 14:00-15:50

Prerequisite: GEOG 2000/GEOG2100

Description: This course surveys the concepts and techniques of GIS supported environmental modeling in three general categories. 1) Modeling in the spatial domain where the focus is on modeling spatial principles. 2) Modeling in the attribute domain where the emphasis is on environmental correlations. 3) Modeling in the combined spatial and attribute domain where both spatial principles and environmental correlations are exploited.

GEOG 3130 GIS Programming with Python

Class time: Monday 14:00 - 15:30 and Wednesday: 14:00 - 17:30

Prerequisite: GEOG 2100

Description: This advanced course explores the more technical aspects of GIS functions and data structures. Students have hands-on access to both raster (grid-cell) and vector-based software packages in the form of lab exercises that culminate in a small student-designed GIS project.

GEOG 3200 Introduction to Remote Sensing

Class time: Monday, Wednesday: 10:00-11:50 and Friday: 10:00-10:50

Description: This course acquaints students with the basic techniques of the collection, processing and interpretation of information about the character of the earth's surface from remote locations. Students become familiar with the use of the visible, infrared, thermal and microwave portions of the electromagnetic spectrum as a means of determining land cover and/or land use. Both manual and computer-assisted techniques are discussed and include hands-on applications.

GEOG 3920 Remote Sensing Seminar: LiDAR Theory and Applications

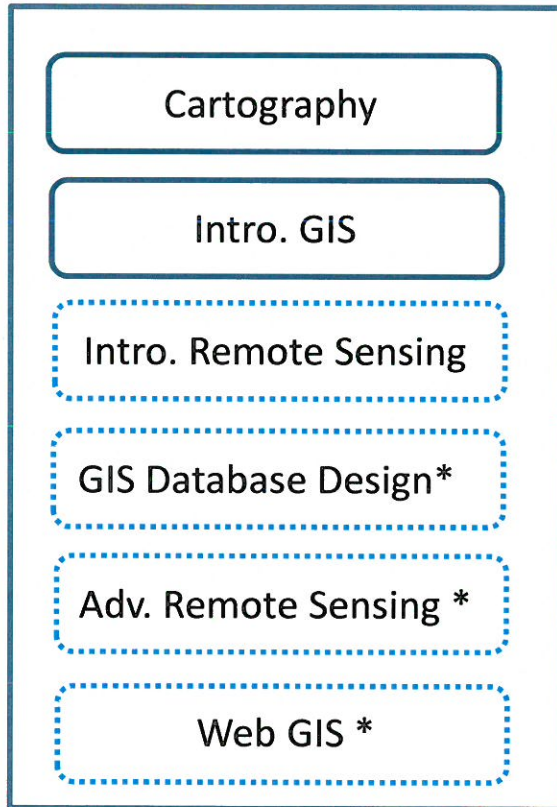
Class time: Tuesday and Thursday 12:00-13:50

Prerequisite: GEOG 2100 or GEOG3200

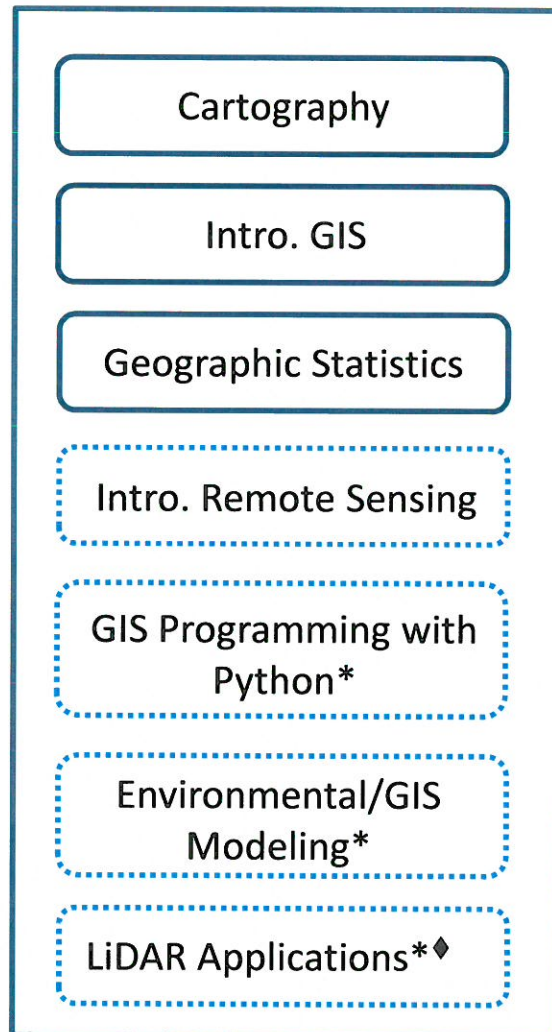
Description: Special topics in advanced remote sensing.

On-campus GIScience schedule – AY 2019-20

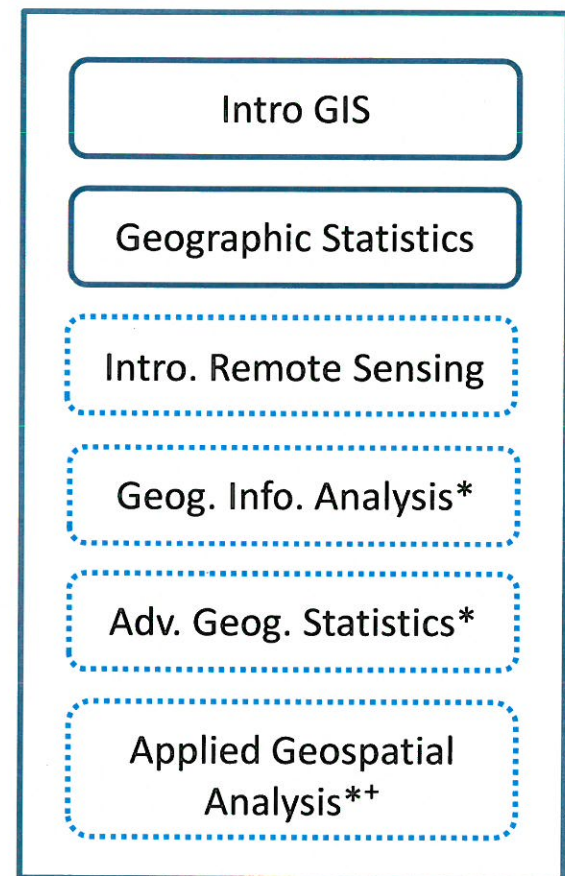
Fall



Winter



Spring



*Prerequisite(s) apply;

+The course will count as Project Management credits for grad students.

♦ Course number: GEOG 3920 - Remote Sensing Seminar