

# Geographic Information Science CERTIFICATE

## Program Overview

In order to be admitted to the Geographic Information Science certificate program, the student must have completed an associate degree or baccalaureate degree, or receive instructor approval if currently pursuing an associate degree in another discipline.

The Geographic Information Science certificate program is designed to introduce students to fundamental concepts in GIS and prepare them for entry level positions in various industries that require some knowledge and understanding of GIS. Students completing the GIS certificate program will learn how to solve problems and support the decision making process by collecting, viewing, manipulating, and mapping digital spatial data. There will be ample opportunities in the classes for students to pursue independent GIS projects related to their interests.

## Career Opportunities

Duties for most positions requiring skills obtained from the GIS Certificate program are highly variable. Some employees spend much of their time working in an office with cutting-edge GIS software, but others are outside in the field most of the time providing support for data collection activities. For instance, in a retail setting, employees may provide technical insight for modeling the most appropriate location of new stores based on a variety of variables such as distance to existing stores, population density, and demographics. In an environmental science setting, employees may identify and map locations of invasive species or provide support in developing a watershed analysis geared to improve water quality.

Most employment opportunities relevant to the GIS Certificate will be listed under a wide range of specialties in various sectors (e.g., environment field technician, business support analyst, computer programmer, etc.) where GIS is not mentioned in the title, but is a preferred skill. The opportunity you are best suited for will be shaped by your previous and ongoing education and work experience.

## Program Outcomes

1. Basic skills for working with digital spatial data in a GIS environment. This includes a fundamental understanding of rasters, vectors, map projections, coordinate systems, and cartography.
2. Solid understanding of ArcGIS from ESRI.
3. Working knowledge of Trimble GPS units.

## Program Faculty

Kirk Stueve  
kirk.stueve@saintpaul.edu

## Program Requirements

Check off when completed

Course	Cr
<input type="checkbox"/> GISC 1760 Introduction to GIS . . . . .	4
<input type="checkbox"/> GISC 1765 Cartography . . . . .	3
<input type="checkbox"/> GISC 1770 Spatial Thinking . . . . .	3
<input type="checkbox"/> GISC 1785 GPS Field Techniques. . . . .	3
<b>Subtotal . . . . .</b>	<b>13</b>
<b>Total Program Credits . . . . .</b>	<b>13</b>

## Program Start Dates

Fall, Spring, Summer  
– only GISC 1785

## Course Sequence

Not all courses are offered each semester; a selection of courses is offered summer term.

Students should consult with the Program Faculty each semester.

Program is not eligible for financial aid.

### First Semester

GISC 1760 Introduction to GIS . . . . .	4
GISC 1765 Cartography . . . . .	3
GISC 1770 Spatial Thinking. . . . .	3
GISC 1785 GPS Field Techniques (summer only) . . . . .	3
<b>Total Semester Credits . . . . .</b>	<b>13</b>

**Total Program Credits . . . . . 13**

### Minimum Program Entry Requirements

Students entering this program must meet the following minimum program entry requirements:

**Note:** Students must have completed an Associate Degree or Baccalaureate degree or have instructor approval to be enrolled in this Certificate.

### Assessment Results and Prerequisites:

Students admitted into Saint Paul College programs may need to complete additional courses based on assessment results and course prerequisite requirements. Certain MATH, READ, and ENGL courses have additional prerequisites.

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*Information is subject to change.  
This Program Requirements Guide is not a contract.*