

# Geographic Information Science AAS DEGREE

## Program Overview

GIS is an acronym for Geographic Information Science. The GIS Associate in Applied Science degree will prepare students for entry level positions in various industries that require geospatial skills and thinking or for transitioning to four-year baccalaureate programs. Students completing this degree will be able to create and import digital special data representing real-world features from the surface of the Earth with the goal of viewing, manipulating, and analyzing the data to be distributed and used in decision making.

Duties for many positions requiring GIS skills typically involve a combination of outside field work and indoor computer work. While outside, raw spatial data is often collected with GPS devices for a variety of features. Some examples include the location of trees, fountains, utility poles, underground pipelines, soil sample sites, endangered species, and more. The working environment may be in a dense urban area or remote national park, depending on the employer. While inside, digital special data are imported from your GPS devices into a computer where the data is assessed for quality and revised/manipulated if necessary. Remotely sensed data from various sensors and online archives may also be used to generate additional information. GIS employees typically coordinate with other experts (e.g. geologists, business operations specialists, hydrologists, farmers, and urban planners) to discuss the scientific and managerial implications of their work.

## Career Opportunities

There are abundant opportunities for employment as a GIS Analyst, GIS Technician, or GIS Specialist in a wide variety of businesses, universities, government agencies, and non-profit organizations. Employees with strong GIS skills are highly coveted in the oil and gas industry, biological and environmental sciences research, natural resource management, government agencies focus on mapping and analyzing infrastructure, intelligence collection by federal agencies, and various business groups. GIS professionals also have ample opportunity to advance into more highly-skilled positions or managerial and leadership positions.

## Program Outcomes

1. Graduates will possess fundamental and applied skills in GIS such as making maps, working with rasters and vectors, geometric accuracy, georeferencing, map projections, spatial analysis, Boolean logic, scripting, remote sensing, air photo interpretation, etc.
2. Graduates will develop a working knowledge of the most popular GIS software, ArcGIS from ESRI.
3. Graduates will develop a working knowledge of GPS devices used by a multitude of businesses and government agencies.

## 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 1775 Intro to Remote Sensing	4
<input type="checkbox"/> GISC 1780 Spatial Analysis	3
<input type="checkbox"/> GISC 1785 GPS Field Techniques	3
<input type="checkbox"/> GISC 2720 Web-based GIS	3
<input type="checkbox"/> GISC 2725 Object-based Image Analysis	3
<input type="checkbox"/> GISC 2730 Programming and Scripting in GIS	4
<b>Subtotal</b>	<b>30</b>

## General Education/MnTC Requirements

General Education/MnTC Requirements	Cr
Refer to the Minnesota Transfer Curriculum Course List for each Goal Area	
<input type="checkbox"/> Goal 1: Communication	7
ENGL 1711 Composition 1 – 4 cr	
SPCH XXXX – 3 cr	
<input type="checkbox"/> Goal 3: Natural Sciences	4
BIOL 1725 Environmental Science	
<input type="checkbox"/> Goal 4: Mathematical/Logical Reasoning	4
MATH 1740 Introduction to Statistics	
<input type="checkbox"/> Goal 5: History, Social Science and Behavioral Sciences	3
GEOG 1700 Physical Geography	
<input type="checkbox"/> Goal 6: Humanities and Fine Arts	3
<input type="checkbox"/> Goals 1-10 of the Minnesota Transfer Curriculum	9
<b>General Education Requirements</b>	<b>30</b>

**Total Program Credits . . . . . 60**

## Transfer Opportunities

Saint Paul College has a transfer articulation agreement between the following program and post-secondary institution for the baccalaureate degree program listed below. For more information please go to [www.saintpaul.edu/Transfer](http://www.saintpaul.edu/Transfer).

## Geographic Information Science AAS

BA Individualized Studies  
Metropolitan State University

## Program Start Dates

Fall, Spring, Summer

## Course Sequence

This course sequence is recommended for a full-time student; however, this sequence is not required.

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

Students should consult with the Program Faculty each semester.

### First Semester

GISC 1760 Introduction to GIS	4
GISC 1765 Cartography	3
GISC 1770 Spatial Thinking	3
Goal 1: SPCH XXXX	3
Goal 5: GEOG 1700 Physical Geography	3
<b>Total Semester Credits</b>	<b>16</b>

### Second Semester

GISC 1775 Intro to Remote Sensing	4
GISC 1780 Spatial Analysis	3
GISC 1785 GPS Field Techniques	3
Goal 4: MATH 1740 Introduction to Statistics	4
<b>Total Semester Credits</b>	<b>14</b>

### Third Semester

GISC 2720 Web-based GIS	3
GISC 2725 Object-based Image Analysis	3
Goal 1: ENGL 1711 Composition 1	4
Goal 6: Humanities and Fine Arts	3
MnTC Elective	3
<b>Total Semester Credits</b>	<b>16</b>

### Fourth Semester

GISC 2730 Programming and Scripting in GIS	4
Goal 3: BIOL 1725 Environmental Science	4
MnTC Elective	6
<b>Total Semester Credits</b>	<b>14</b>

**Total Program Credits . . . . . 60**

## Minimum Program Entry Requirements

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

**Reading:** Score of 78+ or grade of "C" or better in READ 0722

**Writing:** Score of 78+ on Reading Comprehension or grade of "C" or better in ENGL 0922

**College Level Math:** Score of 50+ or grade of "C" or better in MATH 0920

### 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.*