

# GEOGRAPHIC INFORMATION SCIENCE CERTIFICATE

Department of Geography (<https://cas.umw.edu/geography/>)

The Geography Department hosts an interdisciplinary certificate program in Geographic Information Science. Open to students in all majors and to non-degree seeking students, the program is designed to address the growing demand for GIS-trained personnel in business, government, education, health care, and numerous other settings. The field encompasses integrated hardware, software, and database systems that are capable of capturing, storing, analyzing, and displaying geographical information. Upon completion of the certificate, students may be eligible to apply for an additional professional certification in GIS administered by the GIS Certification Institute (GISCI).

## Certificate Requirements

Code	Title	Credits
<b>Introductory Course</b>		
Select one of the following:		4
GISC 200	Introduction to GIS	
GISC 250	Introduction to Geographic Information Systems and Cartography	
EESC 205	GIS Applications in Environmental Science and Geology with Lab	
<b>Intermediate Course</b>		
GISC 351	Spatial Analysis	4
or GEOG 351A	Spatial Analysis	
<b>Programming or Web-GIS Course</b>		
GISC 450	GIS Programming	4
or GISC 482	Web GIS: Concepts and Applications	
<b>Elective</b>		
Select one of the following:		4
GISC 340	Remote Sensing and Air Photo Interpretation	
GISC 355	Mobile Geographic Information Systems and Global Positioning Systems	
Additional 400-level GISC course		
<b>Capstone Experience</b>		
Select one of the following: <sup>1</sup>		3
GISC 495	GISC Certificate Capstone Project	
GISC 499	GIS Internship	
<b>Total Credits</b>		<b>19</b>

<sup>1</sup> All directed studies and internships must be approved by the Department Chair.

All GISC course descriptions can be found in the Geographic Information Science section (<https://catalog.umw.edu/undergraduate/course-descriptions/gisc/>).

Students with professional experience in GIS may have a maximum of one course or 4 credits waived with appropriate approval, but must take additional course credits to total 19 credit hours.

## Academic/Continuance Policies for the Certificate in GIS

A maximum of two approved courses (3-8 credits) may be transferred from another regionally-accredited institution to meet certificate program requirements. All classes for the certificate must be completed within a four-year period following matriculation into the certificate program.

Students must maintain an overall 2.5 grade-point average in certificate program courses, or have permission from the faculty advisor, prior to registering for the final directed study or internship course. Students may be required to meet with an advisor for an annual review of progress and a summary review at the completion of course work.

## Geography Faculty

Melina A. Patterson, Chair  
Dawn S. Bowen, Career Advisor

### Professors

Dawn S. Bowen  
Caitlin C. Finlayson  
Stephen P. Hanna  
Farhang Rouhani

### Associate Professors

Jacqueline Gallagher  
Marco Millones Mayer  
Joseph W. Nicholas  
Melina A. Patterson  
Ping Yin