

# GEOGRAPHIC INFORMATION SYSTEMS, GRADUATE CERTIFICATE (COLLEGE OF LETTERS AND SCIENCE)

The Certificate in Geographic Information Systems is designed for those individuals seeking careers as GIS specialists, providing geographic data management, spatial analysis, and GIS system management support to professionals in a broad range of disciplines, such as criminal justice, health services, city and regional planning, civil and environmental engineering, transportation, and marketing. Certificate holders will seek employment in positions such as “GIS Specialist,” “GIS Analyst,” or “GIS Coordinator.”

The School of Architecture and Urban Planning, and the College of Letters and Science jointly offer the certificate. The core courses (12 credits) focus on the structure of geographic data, components for managing geographic information systems, spatial analysis, and delivery of geographic information through maps and displays. Students select the remaining 6 credits for the certificate from electives, which may include an internship, in areas such as remote sensing, map-making, and data management systems.

Upon completion of the certificate courses, a student is awarded the certificate which qualifies for 5 credential points in the GIS Certification Institute’s standards for professional certification in GIS.

## Admission Requirements

### Application Deadlines

Application deadlines vary by program, please review the application deadline chart (<http://uwm.edu/graduateschool/program-deadlines>) for specific programs. Other important dates and deadlines can be found by using the One Stop calendars (<https://uwm.edu/onestop/dates-and-deadlines>).

### Application

- Students wishing to obtain this certificate must declare their intention by applying to the program office or director.
- All graduate certificate applicants—even those already enrolled in a UWM graduate program—must apply to the Graduate School through the Panthera Admission Application (<https://graduateschool-apply.uwm.edu>).
- Graduate degree and previously admitted graduate non-degree students who decide to pursue a certificate program must submit the Panthera application before completing 6 credits in the certificate sequence.
- Applicants must possess a baccalaureate degree and have a minimum 2.75 cumulative undergraduate grade point average to be admitted in to a certificate program.

## Credits and Courses

A minimum of 6 credits each in Urban Planning and Geography courses are required for completion of the certificate. To earn the Certificate, one must complete six semester-long courses (with a minimum of 18 credits), satisfy graduate school criteria for successful completion and maintain at least a B (3.00) average among the following courses:

Code	Title	Credits
<b>Required</b>		<b>12</b>
<i>Tier 1 (select one course)</i>		
GEOG 726	Geographic Information Science	
URBPLAN 791	Introduction to Urban Geographic Information Systems for Planning	
<i>Tier 2 (select one course)</i>		
GEOG 826	Intermediate Geographic Information Science	
URBPLAN 792	Using Urban Geographic Information Systems (GIS) for Planning	
<i>Tier 3 (Select two courses)</i>		
GEOG 704	Remote Sensing: Environmental and Land Use Analysis	
GEOG 705	Cartography	
GEOG 748	ArcGIS Programming with Python	
GEOG 834	GIS and Society	
GEOG 926	Advanced Geographic Information Science: Geographic Modeling	
GEOG 960	Seminar: Geographic Techniques:	
URBPLAN 793	Applied Projects in Urban Geographic Information Systems	
URBPLAN 794	Internet Geographic Information Systems (GIS)	
ANTHRO 562	Techniques and Problems in Archaeology	
BUS ADM 749	Data and Information Management	
<b>Electives</b>		<b>6</b>
Select two courses from the list below		
GEOG 704	Remote Sensing: Environmental and Land Use Analysis	
GEOG 926	Advanced Geographic Information Science: Geographic Modeling	
GEOG 960	Seminar: Geographic Techniques:	
GEOG 999	Independent Work	
URBPLAN 692	Special Topics in Urban Planning:	
URBPLAN 791	Introduction to Urban Geographic Information Systems for Planning	
URBPLAN 792	Using Urban Geographic Information Systems (GIS) for Planning	
URBPLAN 793	Applied Projects in Urban Geographic Information Systems	
URBPLAN 794	Internet Geographic Information Systems (GIS)	
URBPLAN 991	Legislative/Administrative Agency Internship	
URBPLAN 999	Independent Study	
ANTHRO 380	Anthropological Applications of GIS	
ANTHRO 562	Techniques and Problems in Archaeology	
ANTHRO 768	Topics in Advanced Research Design in Anthropology	
BUS ADM 749	Data and Information Management	
CRM JST 520	Analysis Oriented Technology: Spatial Data Analysis; Crime Mapping; ArcGIS	

INFOST 465	Legal Aspects of Information Products and Services	
INFOST 691	Special Topics in Information Science:	
INFOST 714	Metadata	
Total Credits		18

**Electives**

Code	Title	Credits
GEOG 403	Remote Sensing: Environmental and Land Use Analysis (if not selected above)	4
GEOG 405	Cartography (if not selected above)	4
GEOG 515	Watershed Analysis and Modeling	3
GEOG 525	Geographic Information Science (if not selected above)	4
GEOG 547	Spatial Analysis	4
GEOG 625	Intermediate Geographic Information Science (if not selected above)	4
GEOG 647	ArcGIS Programming with Python (if not selected above)	4
GEOG 698	GIS/Cartography Internship	1-6
GEOG 804	Advanced Remote Sensing	3
GEOG 926	Advanced Geographic Information Science: Geographic Modeling	3
GEOG 834	GIS and Society	3
GEOG 904	Remote Sensing and Urban Analysis	3
GEOG 960	Seminar: Geographic Techniques: (if not selected above)	3
GEOG 999	Independent Work (with appropriate topic)	1-6
URBPLAN 692	Special Topics in Urban Planning: ("Transportation Planning and GIS" subtitle)	1-3
URBPLAN 791	Introduction to Urban Geographic Information Systems for Planning (if not selected above)	3
URBPLAN 792	Using Urban Geographic Information Systems (GIS) for Planning (if not selected above)	3
URBPLAN 793	Applied Projects in Urban Geographic Information Systems (if not selected above)	3
URBPLAN 794	Internet Geographic Information Systems (GIS) (if not selected above)	3
URBPLAN 991	Legislative/Administrative Agency Internship	3-6
URBPLAN 999	Independent Study	1-3
ANTHRO 380	Anthropological Applications of GIS	3
ANTHRO 562	Techniques and Problems in Archaeology (if not selected above)	3
ANTHRO 768	Topics in Advanced Research Design in Anthropology	3
BUS ADM 749	Data and Information Management (if not selected above)	3
CRM JST 520	Analysis Oriented Technology: Spatial Data Analysis; Crime Mapping; ArcGIS	3

INFOST 465	Legal Aspects of Information Products and Services	3
INFOST 691	Special Topics in Information Science: (Economics of Information)	1-3
INFOST 714	Metadata (prerequisites strictly enforced)	3

Other courses as approved by the GIS Certificate Advisory Committee chairperson

Students will be advised by the Geography and Urban Planning faculty who teach GIS courses.

## Certificate Requirements

### Transfer Credit

No more than 20% of the required credits may be taken at an institution other than UWM. To be eligible for transfer, the course must have been completed within the last two years. These courses are subject to Graduate School transfer policy and must be approved by the director of the certificate program.

### Grade Point Average Requirement

A minimum cumulative 3.00 grade point average in certificate courses taken at UWM is required.

### Articulation with Degree Programs

- Credits and courses required for a certificate may double count toward meeting UWM graduate degree requirements subject to the following restrictions:
  - Degree programs must approve the courses from certificates that can double count toward the degree.
  - All credits taken in completion of certificate requirements may count towards a UWM graduate degree as long as they do not contribute more than 90% of the total credits needed to obtain the degree. (Note: Students in PhD programs must still complete the minimum residency requirements)
  - Certificate courses used toward meeting degree requirements must be completed within the time limit for transfer credit.
- Courses completed for a degree may be counted toward a subsequent certificate, subject to all certificate policy requirements.
- A course may count toward no more than one certificate and one degree.
- Students may not earn a certificate subsequent to a concentration in the same area.

### Time Limit

Certificate program time limits shall be established as follows:

- 18 or fewer credits/Three years from initial enrollment in the certificate sequence.
- 19 or more credits/Four years from initial enrollment in the certificate sequence.

For certificates that are designed as add-ons to degree programs and are awarded concurrent with the degree, the time limit shall be the same as that of the degree program.

## Gainful Employment Disclosure Information

- UWM Financial Aid Gainful Employment (<http://uwm.edu/financialaid/apply-for-aid/eligibility/non-degree-students/#primary>)

- Gainful Employment Disclosure Information (<http://www4.uwm.edu/LS/ge-dis/gis/45.0702-Gedt.html>)