

Geographic Information Science (Graduate Certificate)

LAGEOGISCE

Complement your graduate degree with in-demand professional skills. The increase in geographical data from cell phones, satellites, big data and Google Maps is expected to continue at a higher than average pace, and that means an increased market demand for people trained in the spatial analysis skills.

Program description

Degree awarded: Certificate Geographic Information Science (certificate)

Geographic information scientists have the ability to not only map out information but to provide a deeper understanding of the world and the human interactions in it. By combining the disciplines of computer science, statistics and geography, geographic information sciences, experts can help answer the questions of what, where, why and how in many areas of interest in many industries.

The geographic information sciences certificate program teaches students the theoretical aspects of GIS, the technical side of the discipline, and applications of the science. Students learn how to analyze policy problems and research questions from a spatial lens, acquire and analyze remotely sensed data, and model spatial phenomena.

Skills in geographic information science and geospatial data analytics offer students market-ready tools for turning novel sources of spatial data into informed practice and prepare students to address issues such as climate change, population growth and aging, and active transportation. The certificate program enables ASU graduate students from all disciplines and GIS professionals to learn the valuable skill of how to apply GIS concepts and technology to solve complex problems.

The certificate is intended as either a specialization within an existing master's degree or a stand-alone nondegree program for practicing professionals who previously earned a graduate degree.

At a glance

- **College/School:** [The College of Liberal Arts and Sciences](#)
- **Location:** [Tempe](#)

Degree requirements

15 credit hours

Required Core (3 credit hours)

PAF 571 Geographic Information Systems (GIS) and Analysis (3) or
PUP 576 GIS Workshop (3)

Electives (6 credit hours)

Other Requirements (6 credit hours)

ABS 485 GIS in Natural Resources (3)
GIS 521 Geographic Information Science Programming (3)
GIS 561 Fundamentals of Spatial Optimization (3)
GIS 562 Location Analysis and Modeling (3)
GIS 563 Local Statistical Modeling (3)
GIS 571 Spatial Statistics for Geography and Planning (3)
GIS 591 Seminar: Data Mining and Data Driven Geography (3)

Additional Curriculum Information

Students select one of the required core courses for a total of three credit hours.

Two of the other requirement courses are selected from the list above for a total of six credit hours; other courses may be substituted with approval from the program director. The program recognizes that other graduate-level courses on GIS are offered at ASU. Advanced courses are often taught in omnibus courses, courses that have rotating content and whose content is not reflected in their titles. Students may include these courses in their certificate curriculum with approval of the program director.

Students select two three-credit hour elective courses for a total of six credit hours in consultation with the program director.

Admission requirements

Applicants must fulfill the requirements of both the Graduate College and The College of Liberal Arts and Sciences.

Applicants are eligible to apply to the program if they are currently pursuing a master's degree at ASU or have earned a master's degree and are currently practicing professionals.

Applicants must have a minimum cumulative GPA of 3.00 (scale is 4.00 = "A") in an applicable master's degree program.

All applicants must submit:

1. graduate admission application and application fee
2. official transcripts
3. personal statement
4. proof of English proficiency

Additional Application Information

An applicant whose native language is not English must provide proof of [English proficiency](#) regardless of their current residency.

International students who need an F1 or J1 visa first need to apply to and be accepted into a graduate degree program prior to being considered for the certificate program. International students residing in the USA on other types of visas must adhere to all Graduate College policies and procedures regarding admission to be considered for admission to this certificate program.

The personal statement must be a one-page letter describing the applicant's overall objective for the GIS certificate program. It should clearly state the applicant's interest in GIS and provide evidence that the certificate will enhance the applicant's education or current employment.

Currently practicing professionals must submit a final transcript from the institution granting their master's degree.

Tuition information

When it comes to paying for higher education, everyone's situation is different. Students can learn about [ASU tuition and financial aid](#) options to find out which will work best for them.

Career opportunities

Professionals with expertise in geospatial information science are in high demand across sectors and industries, including consulting firms, government agencies and community organizations. Skills in geographical data science, mapping and geospatial analysis are valuable to businesses and institutions relying on data-driven approaches to solve complex real-world problems.

<https://www.onetonline.org/link/summary/15-1299.02>

Career examples include:

- cartographer or photogrammetrist
- geographic information systems technician
- geospatial information scientist or technologist
- geospatial intelligence analyst
- mapping technician

- remote sensing scientist or technologist

Contact information

[School of Geographical Sciences and Urban Planning](#) | COOR 5671

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