GEOGRAPHIC INFORMATION SCIENCE, POST-BACCALAUREATE CERTIFICATE

Saint Louis University's post-baccalaureate certificate program in geographic information science (GIS) focuses on current issues, including environmental quality, climate change, the sustainability of natural and nonrenewable resources, and the impact of human activities on the environment.

Program Highlights

- Focus on advanced remote sensing, GIS, and geospatial methods
- Use of the latest image processing techniques
- Coverage of diverse applications in various disciplines
- Training with industry-leading hardware and software systems (ArcGIS, ENVI+IDL, SARscape) and open source platforms (e.g., QGIS, Boundless Desktop)
- Late afternoon or evening classes that accommodate working professionals
- Instructors with advanced degrees who work and conduct research in the field
- State-of-the-art research labs equipped with modern computing, commercial and open-source software tools, various remote sensing sensors, and manned and unmanned aircraft

Curriculum Overview

The GIS certificate is a 15-credit program that students can pursue on a full- or part-time basis, usually completing the certificate in less than two years.

Courses cover the latest image processing techniques for optical, thermal, RADAR, LiDAR remote sensing. Students will also explore geospatial methods and principles of spatial analysis, database design, cartographic representation, machine learning, computer vision, management and data-mining with the integration of GIS, remote sensing and GPS.

Theory and lectures are supplemented with hands-on projects involving risk assessment and mitigation, environmental modeling, resource exploration, sustainable development, natural resource management and transportation, subterranean mapping, and forest fire management.

Geospatial Intelligence (GEOINT) Certificate Program

In partnership with the United States Geospatial Intelligence Foundation (USGIF), students in this program may simultaneously pursue the USGIF's Geospatial Intelligence (GEOINT) Certificate.

Careers

Graduates have a very good employment outlook. According to the Geospatial Information and Technology Association, employment in this field is growing at an annual rate of almost 35%, with the commercial subsection of the market expanding by 100% each year.

Recent graduates from this program have been employed by various environmental, remote sensing and GIS companies, including Bayer, the National Geospatial-Intelligence Agency and the U.S. Geological Survey (USGS).

Admission Requirements

Minimum GPA: 3.00

Applicants with a GPA below the minimum will be considered on a case-by-case basis.

Students already enrolled in any graduate program at Saint Louis University do not need to reapply and should submit a Petition for Post-Baccalaureate Certificate Admission (Form No. 15). Other applicants must submit the following:

- Official transcripts
- One letter of recommendation
- Résumé
- Professional goal statement (500 to 800 words)

Requirements for International Students

All admission policies and requirements for domestic students apply to international students along with the following:

- Demonstrate English Language Proficiency
- Proof of financial support must include:
  - A letter of financial support from the person(s) or sponsoring agency funding the time at Saint Louis University
  - A letter from the sponsor's bank verifying that the funds are available and will be so for the duration of study at the University
- Academic records, in English translation, of students who have undertaken postsecondary studies outside the United States must include the courses taken and/or lectures attended, practical laboratory work, the maximum and minimum grades attainable, the grades earned or the results of all end-of-term examinations, and any honors or degrees received. WES and ECE transcripts are accepted.

Application Deadlines

The final deadline for fall admittance is May 1 for international students and July 1 for domestic students.

Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GIS 5010</td>
<td>Introduction to Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GIS 5030</td>
<td>Geospatial Data Management</td>
<td>3</td>
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<tr>
<td>GIS 5040</td>
<td>Introduction to Remote Sensing</td>
<td>3</td>
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<tr>
<td>GIS 5050</td>
<td>Digital Image Processing</td>
<td>3</td>
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Select one of the following: 3

- GIS 5061 Photogrammetry
- GIS 5080 Digital Cartography and Geovisualization
- GIS 5090 Introduction to Programming for GIS and Remote Sensing
- GIS 5091 Advanced Programming for GIS and Remote Sensing
- GIS 5092 Machine Learning for GIS and Remote Sensing
GIS 5100  Microwave Remote Sensing: SAR Principles, Data Processing and Applications
GIS 5110  Interferometric Synthetic Aperture Radar (InSAR)
GIS 5140  Satellite Geodesy
GIS 5970  Research Topics
BIOL 5190  Geographic Information Systems in Biology

Total Credits  15

**Geospatial Intelligence (GEOINT) Certificate Program**

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<td>GIS 5970</td>
<td>Research Topics</td>
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<td>GIS Electives</td>
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<td></td>
<td>Total Credits</td>
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**Continuation Standards**

Students must maintain a cumulative grade point average (GPA) of 3.00 in all graduate/professional courses.

**Roadmap**

Roadmaps are recommended semester-by-semester plans of study for programs and assume full-time enrollment unless otherwise noted.

Courses and milestones designated as critical (marked with !) must be completed in the semester listed to ensure a timely graduation. Transfer credit may change the roadmap.

This roadmap should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor/mentor each semester. Requirements, course availability and sequencing are subject to change.

<table>
<thead>
<tr>
<th>Course</th>
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<tr>
<td><strong>Year One</strong></td>
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<tr>
<td><strong>Fall</strong></td>
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<td>Introduction to Geographic Information Systems</td>
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<td>Introduction to Remote Sensing</td>
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<td><strong>Spring</strong></td>
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<td>GIS 5050</td>
<td>Digital Image Processing</td>
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<tr>
<td>Any 5000-level GIS Elective Course</td>
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**Contact Us**

For more information about our program, please contact:

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