

GEOSPATIAL TECHNOLOGIES, APPLIED (CGT)

This program was approved for students entering the university in the Summer 2025-Spring 2026 catalog year. For more information about catalog year, go to Catalog Year Information (<https://catalog.louisville.edu/undergraduate/university-wide-unit-specific-policies/catalog-year/>).

Certificate in Applied Geospatial Technologies

Unit: College of Arts and Sciences (<http://louisville.edu/artsandsciences/>) (AS)

Department: Geographic and Environmental Sciences (<http://louisville.edu/geogeo/undergraduate/>)

Academic Plan Code(s): AGSTCGT, AGSTCGTO

Program Information

This program can be completed 100% online.

This certificate program offers an additional layer of certification to undergraduate students seeking gainful employment in the growing field of geospatial technologies. The certificate will provide an introduction to the concepts and methods of map construction and visualization, including scale, location, projection, design, symbolism, and compilation. It will provide an introduction to geographic information systems and hands-on experience using ArcGIS software, management of relational databases, and the manipulation and graphical output of digital geospatial data. Upon completion of the program, students will be fully versed in the following key areas:

- Use and application of geographic information systems programs to solve complex geospatial problems
- Use, application, and interpretation of remotely sensed data and imagery
- Use of computer programming and scripting to create custom geospatial applications
- Database storage, retrieval, and statistical analysis
- Custom digital map presentation (paper, electronic, web)

The certificate requires the completion of 12 credit hours, of which 6 are required and 6 are elective hours. See the Certificate Requirements tab for details.

Students enrolled in stand-alone certificate programs are not eligible for federal financial aid. UofL students must be enrolled in a degree granting program in conjunction with the certificate program to receive federal aid.

Admission Requirements

Students seeking the certificate must apply in, and be approved by, the Department of Geographic and Environmental Sciences. Admission to the certificate program is open to any undergraduate student with a cumulative GPA of 3.0 or higher.

Undergraduate students who are currently enrolled at UofL must be in good standing to enter certificate in Applied Geospatial Technologies program. First time freshmen, transfer, and postbaccalaureate applicants must meet the regular admission standards (<https://catalog.louisville.edu/undergraduate/admission/college-arts-sciences/>) of the College of Arts and Sciences. This undergraduate certificate program may be completed as a stand-alone credential; however, it

will not be eligible for federal financial aid. Students enrolled in degree programs and pursuing this certificate may be eligible for federal financial aid.

Program Requirements

Code	Title	Hours
Core Coursework		6
GEOG 558	Introduction to Geographic Information Systems	
GEOG 355	Introduction to Remote Sensing	
Elective Coursework		6
Select 2 courses (6 hours) from the following:		
GEOG 350	Introduction to Mapping and Geospatial Technologies	
ENVS 571	GIS and Water Resources	
GEOG 356	Introduction to Spatial Statistics	
GEOG 385	Introduction to Programming for GIS and Spatial Data Analysis	
GEOG 522	GIS and Public Health	
GEOG 531	GIS & Urban Demographic Analysis	
GEOG 556	Advanced Remote Sensing	
GEOG 559	Advanced Geographic Information Systems	
GEOG 590	Special Topics (Web Mapping)	
GEOG 535	GIS and Retail Site Analysis	
Minimum Total Hours		12

At least three (3) semester hours of the requirements for a certificate must be successfully completed while enrolled in the University of Louisville.

One three-hour course from outside the Department of Geographic and Environmental Sciences may be applied as an elective towards the completion of the Certificate in Applied Geospatial Technologies. Courses will be approved on a case-by-case basis but must demonstrate substantive use of geospatial technologies such as GIS and/or remote sensing as an integral part of the curriculum.

Students must complete required courses for the certificate with a GPA of 2.75 or above.

Non-UofL students must meet the same requirements at an accredited institution.