

# GEOSPATIAL TECHNOLOGIES, APPLIED (CGT)

This program was approved for students entering the university in the Summer 2023–Spring 2024 catalog year. For more information about catalog year, go to Catalog Year Information (<http://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 in a traditional classroom format or entirely online ([http://louisville.edu/online/programs/certificate-programs/applied-geospatial-technologies/?utm\\_source=uofl-catalog](http://louisville.edu/online/programs/certificate-programs/applied-geospatial-technologies/?utm_source=uofl-catalog)).*

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 15 credit hours, of which 6 are required and 9 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.

This undergraduate certificate program also may be completed as stand-alone credential. However, students must be enrolled in a degree program to be eligible for federal financial aid.

## Program Requirements

Code	Title	Hours
<b>Core Coursework</b>		<b>6</b>
GEOG 350	Introduction to Mapping and Geospatial Technologies	
GEOG 558	Introduction to Geographic Information Systems	
<b>Elective Coursework</b>		<b>9</b>
Select 3 courses (9 hours) from the following:		
ENVS 571	GIS and Water Resources	
GEOG 355	Introduction to Remote Sensing	
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 583	Spatial and Non-Spatial Database Management	
GEOG 556	Advanced Remote Sensing	
GEOG 559	Advanced Geographic Information Systems	
GEOG 590	Special Topics (Web Mapping)	
<b>Minimum Total Hours</b>		<b>15</b>

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.