Geographic Information Systems is an interdisciplinary digital mapping technology with deep roots in the mapping traditions of geography. GIS is rooted in geography by virtue of its primary function in spatial analysis and its dependence on the basic concepts of location, distribution, and spatial interaction. Education in GIS consists of developing multiple levels of technical and analytical skills through database creation and maintenance, the transfer of data into maps and information sources, and the use of modeling to assess, plan, and predict in real-world situations. All levels are covered in UCM’s Graduate Certification Program.

GIS mapping techniques are highly useful in a range of careers and have become the backbone of most public and private sector information and security systems. According to a recent report by the U.S. Department of Labor, geo-technology is one of the highest demand areas in the current job market and will remain a major employment area into the future.

GIS analysts and technicians are leading the way in building the country’s data infrastructure!

Student Learning Outcomes
Upon completion of the Geographic Information Systems Graduate Certificate program, students will be:

• Skilled in geographic data collection, spatial data base development, and data manipulation.
• Skilled in spatial data analysis, modeling, output interpretations, and model calibrations.
• Able to read and analyze remotely-sensed images and integrate spatial and aspatial data.
• Skilled in computer mapping and related forms of graphic representation.
• Able to apply advanced theoretical principles and geo-techniques to real world data to solve problems.
• Familiar with new literature.

ucmo.edu/ucmonline
**Requirements for Acceptance into the Program**

Students may hold an undergraduate degree in any field. There are no course prerequisites in geography or cognate fields, although course work in map interpretation, cartography, and data management would facilitate GIS skills development. Graduate Record Exam scores are not required by the department. The student must be accepted and admitted by the Graduate School; he/she must also submit a separate application with undergraduate transcripts directly to the department.

This program must be completed within four years and students must maintain a 3.0 GPA.

**Required Graduate Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GEOG 4210</td>
<td>Remote Sensing and Image Interpretation</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 4220</td>
<td>Geographic Information Systems I (GIS I)</td>
<td>3</td>
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<tr>
<td>GEOG 4221</td>
<td>Geographic Information Systems II (GIS II)</td>
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</tr>
<tr>
<td>GEOG 5210</td>
<td>Problems in Geography*</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 5221</td>
<td>Applications of GIS</td>
<td>3</td>
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*Certi

*Certification students may substitute a similar graduate course in another discipline for GEOG 5210 Problems in Geography with the consent of the Geography Department Chair.

These are approved graduate level courses and are intended to educate a student in theoretical and applied aspects of GIS. The cluster includes four skills courses, as well as a literature-based course on geo-spatial techniques and geo-infomatics (Problems in Geography). The full range of GIS capabilities will be covered, including data collection, analysis, modeling, graphic representation, and geovisualization.

This program includes a series of tutorials, lab exercises, textbook, and ancillary reading assignments, writing assignments, and a capstone project with real-world applications.

**Apply to UCM**

Complete your application at: ucmo.edu/graduate and be sure to provide the School of Graduate & Extended Studies with official transcripts. Those transcripts can be sent to:

University of Central Missouri
School of Graduate & Extended Studies
Ward Edwards Room 1800
Warrensburg, MO 64093

If you have any questions about applying, contact the School of Graduate & Extended Studies at 877-729-8266 ext. 3.

**Course Enrollment**

For assistance with enrollment contact the School of Graduate & Extended Studies at 877-729-8266 ext. 21 or extcampus@ucmo.edu

**Quotes from an Alum**

“The most fulfilling work I have ever done, and I am using GIS to help. Humanitarian work with 21st century technology, fantastic.” Dan Cobbs, GIS Specialist for the Katrina hurricane recovery effort. Class of 2004.