Located in the heart of Fairfax, just a few miles from Washington DC, the Department of Geography and Geoinformation Science (GGS) offers an outstanding environment to study and perform cutting-edge research in remote sensing, geography, geoinformatics, Earth systems science, and their various sub-disciplines.

With a variety of educational offerings, ranging from undergraduate programs to graduate certificates and M.S. and Ph.D. programs, a strong and broad research agenda, and superb name recognition within the leading agencies and companies in our field, our department is a premier choice for academic education.

**Undergraduate Programs**


**Undergraduate Certificates**

The GeoManagement Undergraduate Certificate (http://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geomanagement-undergraduate-certificate/) accommodates students who are pursuing a degree in the Department of Geography and Geoinformation Science who also wish to acquire more knowledge on how to manage people and organizations dealing with GIS in a global economy. By understanding marketing terms, financial matters, and also having a good understanding of how to manage people, students will be well prepared to face challenges in multidisciplinary GIS-oriented environments. All courses are available online.

**Minors**

For students pursuing any major in the university, the department offers a Geography Minor (http://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geography-minor/) (fully available online), a Geographic Information Systems Minor (http://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geographic-information-systems-minor/) (research and scholarship intensive), as well as an Urban Informatics Minor (http://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/urban-informatics-minor/).

**Graduate Degrees**

Graduate programs are distinguished by an emphasis on cutting-edge research and their applications toward solving practical problems in human and environmental realms. Degree options include three master's degrees and one doctoral program.

**Graduate Certificates**

For students wishing to pursue graduate-level specialization and skill advancement in specific, focused application areas the department offers the following graduate-level certificates: Data Journalism Graduate Certificate (http://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/data-journalism-graduate-certificate/), Environmental GIS and Biodiversity Conservation Graduate Certificate (http://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/environmental-gis-biodiversity-conservation-graduate-certificate-ggs/), Geographic Information Science Graduate Certificate (http://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geographic-information-science-graduate-certificate/), GeoManagement Undergraduate Certificate (http://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geomanagement-undergraduate-certificate/), G (http://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geographic-information-science-graduate-certificate/), and Remote Sensing and Image Processing Graduate Certificate (http://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/remote-sensing-image-processing-graduate-certificate/). Students may take these as stand-alone certificates or, under certain circumstances, pursue them concurrently with another graduate degree program. Certificate coursework may be applicable toward other graduate degree requirements. In order to gain admission into a graduate certificate program, students must hold a bachelor's degree from a regionally accredited institution and must apply for and be admitted into the corresponding program.

**Master's Programs**

The Earth Systems Science, MS (http://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/earth-systems-science-ms-ggs/) (offered jointly with the Department of Atmospheric, Oceanic and Earth Sciences (http://catalog.gmu.edu/colleges-schools/science/atmospheric-oceanic-earth-sciences/)) provides a global systems approach to the study of the atmosphere, hydrosphere and lithosphere. The degree's emphasis is on the observation and quantitative analysis of earth systems. The Geographic and Cartographic Sciences, MS (http://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geographic-cartographic-sciences-ms/) focuses on techniques to compile, display and analyze spatial data. The Geoinformatics and Geospatial Intelligence, MS (http://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geoinformatics-geospatial-intelligence-ms/) focuses primarily on computational approaches that support the synthesis and analysis of diverse data types in order to identify and monitor complex events and phenomena that manifest themselves over space and time.

**Earth Systems and Geoinformation Sciences, PhD**

The Earth Systems and Geoinformation Sciences, PhD (http://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/earth-systems-science-phd/) offers an outstanding environment to study and perform cutting-edge research in remote sensing, geography, geoinformatics, Earth systems science, and their various sub-disciplines. With a variety of educational offerings, ranging from undergraduate programs to graduate certificates and M.S. and Ph.D. programs, a strong and broad research agenda, and superb name recognition within the leading agencies and companies in our field, our department is a premier choice for academic education.
Distance Education

While all courses and programs listed are offered in traditional face-to-face on campus teaching, the department offers select programs through fully online modules. These online programs include an online version of our Geography Minor (http://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geography-minor/), Geography BA (https://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geography-ba/), Geography BS (https://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geography-bs/), GeoManagement Undergraduate Certificate (http://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geomanagement-undergraduate-certificate/), and an online version of the Geospatial Intelligence Graduate Certificate (http://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geospatial-intelligence-graduate-certificate/).

Courses Available Online

Individual courses which are currently available online (in addition to their traditional delivery modes) are:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGS 101</td>
<td>Major World Regions (Mason Core) (<a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a>)</td>
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<tr>
<td>GGS 102</td>
<td>Physical Geography (Mason Core) (<a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a>)</td>
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<td>GGS 103</td>
<td>Human Geography (Mason Core) (<a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a>)</td>
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<td>GGS 110</td>
<td>Introduction to Geoinformation Technologies</td>
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<tr>
<td>GGS 121</td>
<td>Dynamic Atmosphere and Hydrosphere (Mason Core) (<a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a>)</td>
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<tr>
<td>GGS 122</td>
<td>Dynamic Geosphere and Ecosphere</td>
<td>4</td>
</tr>
<tr>
<td>GGS 300</td>
<td>Quantitative Methods for Geographical Analysis</td>
<td>3</td>
</tr>
<tr>
<td>GGS 302</td>
<td>Global Environmental Hazards</td>
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<td>GGS 303</td>
<td>Geography of Resource Conservation (Mason Core) (<a href="http://catalog.gmu.edu/mason-core/">http://catalog.gmu.edu/mason-core/</a>)</td>
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<td>GGS 310</td>
<td>Introduction to Digital Cartography</td>
<td>3</td>
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<td>GGS 311</td>
<td>Introduction to Geographic Information Systems</td>
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<td>GGS 312</td>
<td>Physical Climatology</td>
<td>3</td>
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<td>GGS 315</td>
<td>Geography of the United States</td>
<td>3</td>
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<td>GGS 380</td>
<td>Geography of Virginia</td>
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<td>GGS 416</td>
<td>Satellite Image Analysis</td>
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<td>GGS 462</td>
<td>Web Mapping</td>
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<td>GGS 553</td>
<td>Geographic Information Systems</td>
<td>3</td>
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<tr>
<td>GGS 650</td>
<td>Introduction to GIS Algorithms and Programming</td>
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</tr>
<tr>
<td>GGS 680</td>
<td>Earth Image Processing</td>
<td>3</td>
</tr>
<tr>
<td>GGS 692</td>
<td>Web-based Geographic Information Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

Faculty

Department Faculty
Professors
Di, Houser, Pfoser (chair), Qu, Wong, C. Yang

Associate Professors
Croitoru (online coordinator), Leslie, Rice, D. Sun, R. Yang (graduate coordinator)

Assistant Professors
Anderson, Burtch (undergraduate coordinator), Komwa, Oughton, Rosenfeld, Wessels, Züfle

Research or Contract Professors
Batarseh, Li, M. Sun

Adjunct Faculty
Dillon, Grymes, Jackson, McGlone, Resmini, Rockwell, Ward, Weaver

Requirements & Policies

Requirements

Writing-Intensive Requirement

The university requires all students to complete at least one course designated as “writing intensive” in their majors at the 300 level or above. Students majoring in geography fulfill this requirement by successfully completing GGS 415 Seminar in Geography.

Policies

Students are governed by the university’s policies (http://catalog.gmu.edu/policies/).

GGS Lab Use

Access to GGS lab space is contingent upon active student status and registration in GGS courses. Labs are key card accessible and only authorized students may use the labs for academic work.

Non-degree Status

Applicants who have not been admitted to a specific graduate degree or certificate program and still wish to attend courses may apply for non-degree studies. This is intended for students who do not seek a specific degree. These students must apply for non-degree status and be admitted through a process comparable to the one followed by degree-seeking students.

While it may be possible to transfer some of the credits earned in non-degree status to a degree program, such transfers are not automatic. Non-degree students who intend to transfer their credits to a degree program should discuss this in a timely manner with the appropriate department coordinator. Further information can be found in the Non-degree Enrollment (http://catalog.gmu.edu/admissions/non-degree-enrollment/) section of this catalog.
Programs

• Data Journalism Graduate Certificate
• Earth Systems Science, MS (GGS)
• Earth Systems and Geoinformation Sciences, PhD
• Environmental GIS and Biodiversity Conservation Graduate Certificate
• GeoManagement Undergraduate Certificate
• Geographic Information Science Graduate Certificate
• Geographic Information Systems Minor
• Geographic and Cartographic Sciences, MS
• Geography Minor
• Geography, BA
• Geography, BS
• Geoinformatics and Geospatial Intelligence, MS
• Geospatial Intelligence Graduate Certificate
• Remote Sensing and Image Processing Graduate Certificate
• Urban Informatics Minor