DEPARTMENT OF GEOGRAPHY AND GEOINFORMATION SCIENCE

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Administration

- Dieter Pfoser, Chair
- Ruixin Yang, Graduate Program Director
- Nathan R. Burtch, Undergraduate Program Director

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

The Department of Geography and Geoinformation Science offers a Geography, BA (http://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geography-ba/) and a Geography, BS (http://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geography-bs/). The department also offers accelerated master's program opportunities for the Geographic and Cartographic Sciences, MS (https://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geographic-cartographic-sciences-ms/) and the Geoinformatics and Geospatial Intelligence, MS (https://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geoinformatics-geospatial-intelligence-ms/). Additionally, the department offers the GeoManagement Undergraduate Certificate (http://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geomanagement-undergraduate-certificate/).

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/), G (http://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geographic-information-science-graduate-certificate/)eospatial Intelligence Graduate Certificate (http://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/geospatial-intelligence-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-geoinformation-sciences-phd/) combines and extends the three scientific avenues mapped by our master's programs to provide a thorough and interdisciplinary approach to doctoral studies.

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/), 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:

Code	Title	Credits
GGS 101	Major World Regions (Mason Core) (http://catalog.gmu.edu/mason-core/)	3
GGS 102	Physical Geography (Mason Core) (http://catalog.gmu.edu/mason-core/)	3
GGS 103	Human Geography (Mason Core) (http://catalog.gmu.edu/mason-core/)	3
GGS 110	Introduction to Geoinformation Technologies	3
GGS 121	Dynamic Atmosphere and Hydrosphere (Mason Core) (http://catalog.gmu.edu/mason-core/)	4
GGS 122	Dynamic Geosphere and Ecosphere	4
GGS 210	Introduction to Spatial Computing	3
GGS 300	Quantitative Methods for Geographical Analysis	3
GGS 302	Global Environmental Hazards	3
GGS 303	Geography of Resource Conservation (Mason Core) (http://catalog.gmu.edu/mason-core/)	3
GGS 310	Cartographic Design	3
GGS 311	Geographic Information Systems	3
GGS 312	Physical Climatology	3
GGS 315	Geography of the United States	3
GGS 317	Geography of China (Mason Core) (http://catalog.gmu.edu/mason-core/)	3
GGS 379	Remote Sensing	3
GGS 380	Geography of Virginia	3
GGS 416	Satellite Image Analysis	3
GGS 462	Web-based Geographic Information Systems	3
GGS 553	Geographic Information Systems	3
GGS 650	Introduction to GIS Algorithms and Programming	3
GGS 680	Earth Image Processing	3
GGS 681	Social Media Analysis	3
GGS 692	Web-based Geographic Information Systems	3

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

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 Geographic Thought and Methodology.

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