GEOGRAPHIC AND CARTOGRAPHIC SCIENCES, MS

Banner Code: SC-MS-GECA

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The Geographic and Cartographic Sciences, MS (GECA) focuses on the growing demand for scientists and professionals in the field of geographic information science, who use geographical approaches and tools such as geographic information systems (GIS), remote sensing, cartography, and geovisualization to address and solve geographic problems. This expertise is useful to a wide variety of employers in the federal, state, and local government sectors, as well as in business, industry, and non-profit organizations. The degree's coursework concentrates on the collection, analysis, and display of geographic data, in concert with the use of emerging geospatial technologies to address problems in the human and environmental geographic domains. Students in this program benefit from a large and diverse local employment market, as well as a network of more than 700 program alumni (1978-present) who live and work in the local area.

Research Facilities

The Department of Geography and Geoinformation Science (http://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/) has extensive research and teaching facilities, including several labs equipped with GIS, remote sensing, cartographic, and analytical software from leading industry vendors and open source groups. Specialized instructional space for geographic information science is housed in newly renovated labs in Exploratory Hall on the Fairfax Campus.

Admissions & Policies

Admissions

University-wide admissions policies can be found in Graduate Admissions Policies (http://catalog.gmu.edu/admissions/graduate-policies/).

Eligibility and Application Requirements

In addition to the university-wide requirements, applicants for this master's should have a bachelor's degree in geography, cartography, or a closely related field. Applicants without an undergraduate degree in geography may be required to take one course in each of the following: physical geography, human geography, and cartography. All applicants must have a course in statistics.

The program also requires two letters of recommendation and a statement of interest in the degree.

Credit from courses taken at other departments and other universities may be applied to the program with prior approval.

GRE scores are not required for admission into this program, but are encouraged if the student is seeking internal funding.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now/).

Policies

For policies governing all graduate programs, see AP.6 Graduate Policies (http://catalog.gmu.edu/policies/academic/graduate-policies/)

Secondary Program Options

Students enrolled in this master's program have the option of adding a secondary graduate certificate program (http://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/#programstext). Depending upon the secondary program chosen, many courses may be applicable to both the certificate and the master's. Before adding a secondary program, students are advised to carefully review the Requirements for Graduate Certificates (http://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-8) and the Requirements for Master's Degrees (http://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-9) in AP.6 Graduate Policies (http://catalog.gmu.edu/policies/academic/graduate-policies/). Faculty advisors should be contacted for further guidance and for graduate certificate program suggestions.

Requirements

Degree Requirements

Total credits: 30 or 37

Students should refer to the Admissions & Policies tab for specific policies related to this program.

Students must complete either 30 graduate credits (with a thesis) or 37 graduate credits (without a thesis). If the non-thesis option is selected, students are required to pass a comprehensive exam.

Core Courses

Code	Title	Credits
GGS 551	Cartographic Design	3
GGS 553	Geographic Information Systems	3
GGS 560	Quantitative Methods	3
GGS 579	Remote Sensing	3
GGS 689	Seminar in Geographic Thought and Methodology	3
Total Credits		15

Thesis or Non-thesis Options

Thesis Option

Students selecting the thesis option must complete:

Code	Title	Credits
Three credits of		3
GGS 799	Thesis	

Select 12 credits of electives in 500 to 798-level GGS courses. [1]	12
Total Credits	15

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Electives should be selected in consultation with an advisor. With departmental approval, up to 9 credits from closely related disciplines may be applied to the degree.

Non-thesis Option

Students selecting the non-thesis option must complete the following:

Code	Title	Credits
Choose one Systematic course		3
GGS 505	Transportation Geography	
GGS 507	Geographic Approaches for Sustainable Development	
GGS 540	Health Geography	
GGS 544	Military Geography	
GGS 615	Economic Geography	
GGS 656	The Hydrosphere	
GGS 657	The Lithosphere	
GGS 670	Introduction to Atmosphere and Weather	
GGS 704	Spatial Demography	
Choose one Regional course		3
GGS 516	Geography of Latin America	
GGS 517	Geography of China	
GGS 518	Geography of North Africa and the Middle East	
GGS 526	Geography of Eastern Europe and Russia	
GGS 533	Issues in Regional Geography	
GGS 700	Comprehensive Exam	1
Select an additional 15 credits of electives in 500 to 798-level GGS courses. [1]		15
Total Credits		22

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Electives should be selected in consultation with an advisor. With departmental approval, up to 9 credits from closely related disciplines may be applied to the degree.

Accelerated Master's

Bachelor's Degree (any)/Geographic and Cartographic Sciences, Accelerated MS

Overview

Offered by the Department of Geography and Geoinformation Sciences (GGS) (http://catalog.gmu.edu/colleges-schools/science/geography-geoinformation-science/) in the College of Science (http://catalog.gmu.edu/colleges-schools/science/), this bachelor's/accelerated master's degree program enables highly qualified undergraduates to obtain any Mason bachelor's degree and the Geographic and Cartographic Sciences, MS degrees within an accelerated timeframe. The program strategy enables students to undertake graduate coursework during their final year in the bachelor's degree. In the case of a 120 credit bachelor's program, this accelerated master's option can be completed as a 138 credit program (thesis option) or 145 credit program (comprehensive exam option). This accelerated pathway prepares students for professional careers where geoinformation management, geographic analysis, and geospatial visualization are of importance.

Students in this accelerated degree program must fulfill all university requirements for the bachelor's program and the Geographic and Cartographic Sciences, MS. While the information below is largely comprehensive, students are strongly encouraged to also review AP.6.7 Bachelor's/Accelerated Master's Degrees (http://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-7).

Application Requirements

Students with an overall GPA of at least 3.0 may apply for provisional acceptance into this accelerated master's program after completing at least 60 undergraduate credits. Additionally, students they must have completed the following courses with a combined GPA of 3.0 or better: GGS 300 Quantitative Methods for Geographical Analysis, GGS 311 Geographic Information Systems, and any one upper level GGS-prefixed course.

Applicants to all graduate programs at Mason must meet the admission standards and application requirements for graduate study as specified in the Admissions section of this catalog. However, this accelerated master's does not require GRE test scores, letters of recommendation, CV/resume, or a statement of interest.

While being undergraduate students, accelerated master's students must complete the graduate courses indicated on their Accelerated Master's Program Application (obtained from the Office of Academic and Student Affairs) with a minimum grade of B in each course. They must maintain a minimum GPA of 3.0 in all coursework and in coursework applied to their major.

At the beginning of their final undergraduate semester, they must submit the Bachelor's/Accelerated Master's Transition Form (found on the Office of the University Registrar website). Students must begin their master's program in the semester immediately following the term of undergraduate degree conferral. Students should consult with their faculty advisor in the Department of Geography and Geoinformation Science and the Office of Academic and Student Affairs to obtain further guidance.

Accelerated Option Requirements

Students admitted to this program may start taking graduate courses after completing 75 undergraduate credits. It is recommended that students register for one of the following courses in their first semester of accelerated coursework:

Code	Title	Credits
GGS 551	Cartographic Design	3
GGS 553	Geographic Information Systems	3
GGS 560	Quantitative Methods	3
GGS 579	Remote Sensing	3

Including the course chosen above, up to 12 credits of graduate coursework may be applied to both undergraduate degree and the master's degree. If students earn at least a B in these classes, they are granted advanced standing in the master's program and must then complete 18 (thesis option) or 25 (comprehensive exam option) additional credits to receive the master's degree. All other master's degree requirements must be met.

Reserve Graduate Credit

During the bachelor's degree status, students may take up to 6 graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree, but will reduce the subsequent master's degree credits accordingly. With 12 credits counted toward the undergraduate and graduate degrees plus the maximum 6 reserve credits, the credits necessary for the graduate degree can be reduced by up to 18. The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the department. To apply the reserved credits to the master's degree, students must request their transfer from the undergraduate degree to the graduate degree via the Bachelor's/Accelerated Master's Transition Form found on the Office of the University Registrar website.