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, and the use of emerging geospatial technologies to address problems in the human and environmental geographic domains. The GECA program's disciplinary domain has been recognized by the US Department of Labor as one of the three most strategic job growth areas. 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 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 the Graduate Admissions Policies section of this catalog.

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

Eligibility and Application 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 GRE test scores, three letters of recommendation, transcripts of all college coursework, and a statement of interest in the degree. The GRE requirement will be waived if the student holds a master's degree from a regionally-accredited U.S. institution. TOEFL scores are required for all foreign applicants. Credit from courses taken at other departments and other universities may be applied to the program with prior approval.

Policies
For policies governing all graduate programs, see AP.6 Graduate Policies

Secondary Program Options
Students enrolled in this master's program have the option of adding a secondary graduate certificate program. 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 and the Requirements for Master's Degrees in the AP.6 Graduate Policies section of this catalog. 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

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GGS 553</td>
<td>Geographic Information Systems</td>
<td>3</td>
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<tr>
<td>GGS 560</td>
<td>Quantitative Methods</td>
<td>3</td>
</tr>
<tr>
<td>GGS 579</td>
<td>Remote Sensing</td>
<td>3</td>
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<tr>
<td>GGS 689</td>
<td>Seminar in Geographic Thought and Methodology</td>
<td>3</td>
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Total Credits: 12

Thesis or Non-thesis Options

Thesis Option
Students selecting the thesis option must complete:

Three credits of

<table>
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<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GGS 799</td>
<td>Thesis</td>
<td>3</td>
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Select 15 credits of electives in 500 to 799-level GGS courses.
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.

Total Credits: 18

Non-thesis Option
Students selecting the non-thesis option must complete:

GGS 700 Comprehensive Exam (1 credit) 1
<table>
<thead>
<tr>
<th>Select 24 credits of electives in 500 to 799-level GGS courses.</th>
<th>24</th>
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<tr>
<td>Electives should be selected in consultation with an advisor.</td>
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<tr>
<td>With departmental approval, up to 9 credits from closely related disciplines may be applied to the degree.</td>
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<tr>
<td>Total Credits</td>
<td>25</td>
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