

Program Change Request

Date Submitted: 01/03/25 1:11 pm

Viewing: **SC-MS-GECA : Geographic and Cartographic Sciences, MS**

Last approved: 04/26/24 1:10 pm

Last edit: 01/03/25 1:11 pm

Changes proposed by: nburtch

Catalog Pages Using this Program
[Geographic and Cartographic Sciences, MS](#)

No longer anticipated close

Are you completing this form on someone else's behalf?

No

Effective Catalog: 2025-2026

Program Level: Graduate

Program Type: Master's

Degree Type: Master of Science

Title:
Geographic and Cartographic Sciences, MS

5. Is this badge co-s...

In Workflow

1. **GGC Chair**
2. **SC Curriculum Committee**
3. SC Assistant Dean
4. Assoc Provost-Graduate
5. Registrar-Programs: Duration
6. Registrar-Programs

Approval Path

1. 01/03/25 1:26 pm
Nathan Burtch (nburtch): Approved for GGC Chair

History

1. Nov 8, 2017 by clmig-jwehrheim
2. Mar 8, 2018 by pchampan
3. Mar 8, 2018 by pchampan
4. Nov 9, 2020 by Timothy Leslie (tleslie)
5. Feb 23, 2021 by jriemen
6. Dec 2, 2021 by Nathan Burtch (nburtch)
7. May 17, 2022 by Tory Sarro (vsarro)
8. Apr 26, 2024 by Jennifer Bazaz

Banner Title: MS Geograph & Cartographic Sci

In this a retitling of

Registrar/OAPI Use Only – SCHEV Status Approved

Registrar's Office Use Only – Program Start Term

Registrar/OAPI Use Only – SCHEV Letter

Registrar/OAPI Use Only – SACSCOC Status

Concentration(s):

Registrar/IRR Use Only – Concentration CIP Code

College/School: College of Science

Department / Academic Unit: Geography & Geoinformation Science

Jointly Owned Program? No

Justification

What: Updating the thesis and non-thesis options for the degree.

Why: Currently the thesis option is 30 credits and the non-thesis option is 37 credits. We are aiming to set up the MS GECA as we did with the MS GEOI, which is 30 credits regardless of thesis or non-thesis. Of the remaining 12 elective classes, we are creating two pots of courses, ensuring that our GECA students are exposed to both graduate level geography courses and additional geospatial techniques, while still allowing 6 credits of student choice.

GGS believes this change will be more equitable for our graduate students in terms of work and time to degree.

Total Credits Required: Total credits: 30 ~~or 37~~

Registrar's Office Use Only - Program Code:
SC-MS-GECA

**Registrar/IRR Use
Only – Program CIP
Code**

**Admission
Requirements:**

Admissions

University-wide admissions policies can be found in the [Graduate Admissions Policies](#) section of this catalog. International students and students having earned international degrees should also refer to [Admission of International Students](#) for additional requirements.

Eligibility

Applicants for this master's should have a bachelor's degree in geography, cartography, or a closely related field from an institution of higher education accredited by a Mason-recognized U.S. institutional accrediting agency or international equivalent. 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.

Application Requirements

To apply for this program, prospective students should submit the [George Mason University Admissions Application](#) and its required supplemental documentation, two letters of recommendation, and a statement of interest in the degree.

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

**Program-Specific
Policies:**

Policies

For policies governing all graduate programs, see [AP.6 Graduate Policies](#).

Transferring Previous Graduate Credit into this Program

Previously earned and relevant graduate credits may be eligible for transfer into this program; details can be found in the [Credit by Exam or Transfer](#) section of this catalog.

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 [AP.6 Graduate Policies](#). Faculty advisors should be contacted for further guidance and for graduate certificate program suggestions.

Degree

Requirements:

Students should refer to the [Admissions & Policies](#) tab for specific policies related to this program.

Students must complete **either** 30 graduate credits [and choose \(with a thesis thesis\)](#) or [non-thesis culminating experience](#). ~~37 graduate credits (without a thesis)~~. If the non-thesis option is selected, students are required to pass a comprehensive exam.

Core Courses

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

Electives

Geography Electives

Select one of the following courses:		<u>3</u>
GGS 504	Population Geography	
GGS 505	Transportation Geography	
GGS 507	Geographic Approaches for Sustainable Development	
GGS 515	Economic Geography	
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 540	Health Geography	
GGS 544	Military Geography	
GGS 554	History of Cartography	

[GG5 557](#) [Urban Planning](#)

[GG5 656](#) [The Hydrosphere](#)

[GG5 657](#) [The Lithosphere](#)

[GG5 670](#) [Introduction to Atmosphere and Weather](#)

[Geospatial Techniques](#)

[Select one of the following courses:](#)

3

[GG5 531](#) [Land-Use Modeling Techniques and Applications](#)

[GG5 562](#) [Photogrammetry](#)

[GG5 563](#) [Advanced Geographic Information Systems](#)

[GG5 622](#) [Drone Remote Sensing](#)

[GG5 626](#) [Physical Fundamentals of Remote Sensing](#)

[GG5 629](#) [Remote Sensing of the Environment and Earth System](#)

[GG5 631](#) [Spatial Agent-Based Models of Human-Environment Interactions](#)

[GG5 632](#) [Spatial Modeling for Public Health](#)

[GG5 650](#) [Introduction to GIS Algorithms and Programming](#)

[GG5 653](#) [GIS Analysis and Application](#)

[GG5 655](#) [Geovisualization](#)

[GG5 658](#) [Terrain Mapping](#)

[GG5 664](#) [Spatial Data Structures](#)

[GG5 675](#) [Location Science](#)

[GG5 680](#) [Earth Image Processing](#)

[GG5 681](#) [Social Media Analysis](#)

[GG5 692](#) [Web-based Geographic Information Systems](#)

[GG5 740](#) [Hyperspectral Imaging Systems](#)

[GG5 754](#) [Earth Science Data and Advanced Data Analysis](#)

[GG5 760](#) [Advanced Topics in Remote Sensing](#)

[GG5 773](#) [Interoperability of Geographic Information Systems](#)

[GG5 777](#) [Remote Sensing Natural Hazards](#)

[GG5 787](#) [Scientific Data Mining for Geoinformatics](#)

<u>GGS 788</u>	<u>Deep Learning for Geoinformation</u>
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<u>GGS 791</u>	<u>Advanced Spatial Statistics</u>
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<u>Select 6 credits of graduate courses</u> ¹	<u>6</u>
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Total Credits	12
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¹

Electives should be selected in consultation with an advisor. With department approval, 6 credits from closely related disciplines may be applied to the degree. One additional regional course may count in this section.

Thesis or Non-thesis Options

<u>Students choose the culminating experience of either a thesis or a project and a comprehensive exam (either must total 3 credits). The same graduate-level quality will be expected from either option:</u>	<u>3</u>
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Thesis Option

<u>GGS 799</u>	<u>Thesis (3 credits)</u>
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Non-thesis Option

<u>GGS 700</u>	<u>Comprehensive Exam (1 credit)</u>
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<u>GGS 798</u>	<u>Master's Research Project (2 credits)</u>
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Total Credits	3
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Thesis Option

Students selecting the thesis option must complete:

Three credits of	3
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GGS-799	Thesis
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Select 12 credits of electives in 500 to 798-level GGS courses. ¹	12
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Total Credits	6
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¹

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:

Choose one Systematic course	3
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GGS-505	Transportation Geography
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GGS-507	Geographic Approaches for Sustainable Development
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GGS-540	Health Geography
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GGS-544	Military Geography
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GGG-557	Urban Planning	
GGG-615	Economic Geography	
GGG-656	The Hydrosphere	
GGG-657	The Lithosphere	
GGG-670	Introduction to Atmosphere and Weather	
GGG-704	Spatial Demography	
Choose one Regional course		3
GGG-516	Geography of Latin America	
GGG-517	Geography of China	
GGG-518	Geography of North Africa and the Middle East	
GGG-526	Geography of Eastern Europe and Russia	
GGG-533	Issues in Regional Geography	
GGG-700	Comprehensive Exam	±
Select an additional 15 credits of electives in 500 to 798-level GGS courses. ¹		15
Total Credits		0

1

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.

Retroactive Requirements Updates:

Plan of Study:

Honors
Information:

Accelerated
Description/Dual
Degree
Description:
INTO-Mason
Requirements:

College
Requirements &
Policies:

Department /
Academic Unit

Requirements &

Policies

Program Outcomes

Additional Program Information

This information is required by the Office of Accreditation and Program Integrity.

Courses offered via distance (if applicable):

Indicate whether

What is the primary delivery format for the program? Face-to-Face Only

Does any portion of this program occur off-campus?

No

Are you working with a vendor / other collaborators to offer your program?

No

Related Departments

Could this program prepare students for any type of professional licensure, in Virginia or elsewhere?

No

Are you adding or removing a licensure component?

No

Additional SCHEV & SACSCOC Information

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Is this new program

Is this new program

Is this change a simple retitling of an existing program, with no other changes, to any existing program content, curriculum requirements, etc?

No

Does this change represent a repackaging of content in an existing approved degree/certificate program at the same instructional level (i.e., baccalaureate, master's, or doctoral)?

No

Percentage of total credits containing new course content. ("New course content" is defined by SACSCOC as content that is not currently included in an existing approved degree/certificate program at the same instructional level. Do not exclude gen ed credits in calculations for undergraduate programs.)

0%-24%

Does this change include the addition of a distance education or face-to-face method of delivery for this program?

No

Does this change include the addition of a course/credit-based competency-based education delivery option?

No

Will any additional equipment/facilities be needed?

No

Will any additional faculty be required?

No

Will any additional financial resources be needed?

No

Additional library/learning resources needed?

No

OAPI Use Only – Determination of SACSCOC Impact

Comments or Notes

Green Leaf Program Designation

Is this a Green Leaf program? No

Sustainability focused on
List sustainability-

List sustainability-

Does this program cover material which crosses into another department?

No

Additional Attachments

SCHEV Proposal

Executive Summary

Reviewer Comments

Additional Comments

Is this course required of all students in this degree program?

%wi_required.eshtml%

Key: 211