

Program Change Request

Date Submitted: 12/05/18 1:26 pm

Viewing: **SC-PHD-ESGS : Earth Systems and Geoinformation Sciences, PhD**

Last approved: 02/15/18 10:13 am

Last edit: 12/05/18 1:26 pm

Changes proposed by: jbazaz

Catalog Pages
Using this Program

[Earth Systems and Geoinformation Sciences, PhD](#)

In Workflow

1. **GGS Chair**
2. **SC Curriculum Committee**
3. SC Associate Dean
4. SC CAT Editor
5. Assoc Provost-Graduate
6. Registrar-Programs

Approval Path

1. 12/05/18 1:28 pm
Dieter Pfoser (dpfoser): Approved for GGS Chair

History

1. Nov 9, 2017 by clmig-jwehrheim
2. Feb 15, 2018 by Rebekah Zacharias (rzachari)

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

Yes

Requestor:

Name	Extension	Email
Ruixin Yang	3615	ryang

Effective Catalog: 2019-2020

Program Level: Graduate

Program Type: Doctoral

Degree Type: Doctor of Philosophy

Title: Earth Systems and Geoinformation Sciences, PhD

Banner Title: **Earth Systems & Geoinformation**

Registrar/OAPI Use Only – SCHEV Status: Approved

Registrar's Office Use Only – Program Start Term

Registrar/OAPI Use Only – SCHEV Letter

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: Clarifying the dissertation committee's composition.

Total Credits Required: Total credits: 72

Registrar's Office Use Only - Program Code: SC-PHD-ESGS

Registrar/IRR Use Only – Program CIP Code

Admission Requirements:

Admissions

University-wide admissions policies can be found in [Graduate Admissions Policies](#).

To apply for this program, please complete the [George Mason University Admissions Application](#).

Eligibility

This program is intended for graduates who hold a MS or MA degree in atmospheric science, climatology, meteorology, Earth science, geology, environmental science, remote sensing, hydrology, oceanography, geography, or a related field. Highly-qualified students with a BS or BA in applicable fields are also encouraged to apply. Knowledge of mathematics through calculus is preferred. Interested applicants should contact the program degree coordinator or the GGS director of academic programs for more specific advice.

Application Requirements

To apply, prospective students should complete the [George Mason University Admissions Application](#). Official transcripts from each college and graduate institution attended, a current résumé, and an expanded goals statement will be required.

Applicants will also need three letters of recommendation and an official report of scores obtained on the GRE-GEN. The GRE requirement for admission to the doctoral program may be waived if the student holds a master's degree from a regionally accredited U.S. institution. TOEFL scores are required of all international applicants. GRE-GEN scores are required of students wishing to be considered for the Office of the Provost's Presidential Scholarship. A minimum combined math and verbal GRE score of 270/340 are needed to qualify for the Presidential Scholarship.

Program-Specific

Policies:

Policies

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

Reduction of Credits

For students entering the doctoral program with a master's degree in a related field from a regionally accredited institution, the number of required credits may be reduced up to 30 credits, subject to approval of the program faculty and the associate dean for student affairs. See [AP.6.5.2 Reduction of Credits](#) for more information.

Secondary Program Options

Students enrolled in this doctoral program have the option of adding a [secondary graduate certificate or master's program](#). Depending upon the secondary program chosen, many courses may be applicable to both programs. Before adding a secondary program, students are advised to carefully review [AP.6.8 Requirements for Graduate Certificates](#) or [AP.6.9 Requirements for Master's Degrees](#) and [AP.6.10 Requirements for Doctoral Degrees](#). Faculty advisors should be contacted for further guidance and for secondary program suggestions.

Degree Requirements:

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

Core Courses

Students are required to choose from the following courses in the core areas below. Of the cores, students must complete at least one course in five of the cores and two courses in at least three of those five cores.

Code	Course List Title	Credits	
The core areas from which to choose these credits are:			
Quantitative Core:			
GGS 560	Quantitative Methods	24	
GGS 754	Earth Science Data and Advanced Data Analysis		
GGS 791	Advanced Spatial Statistics		
Geoinformatics Core:			
GGS 650	Introduction to GIS Algorithms and Programming	24	
GGS 664	Spatial Data Structures		
GGS 675	Location Science		
GGS 692	Web-based Geographic Information Systems		
GGS 787	Scientific Data Mining for Geoinformatics		
Geosciences and Physical Geography Core:			
GGS 656	The Hydrosphere		24
GGS 657	The Lithosphere		
GGS 670	Introduction to Atmosphere and Weather		
GGS 721	Biogeography		
PHYS 575	Atmospheric Physics I		
Human Geography Core:			
GGS 505	Transportation Geography	24	
GGS 533	Issues in Regional Geography		
GGS 540	Health Geography		
GGS 704	Spatial Demography		

Code	Title	Credits
Geographic Information Science Core:		
GGG 553	Geographic Information Systems	
GGG 563	Advanced Geographic Information Systems	
GGG 671	Algorithms and Modeling in GIS	
Remote Sensing Core:		
GGG 579	Remote Sensing	
GGG 680	Earth Image Processing	
GGG 756	Physical Principles of Remote Sensing	
GGG 760	Advanced Topics in Remote Sensing	
GGG 777	Remote Sensing Natural Hazards	
Total Credits		24

Research Synthesis and Colloquium

Code	Course List Title	Credits
Research Synthesis		
Select one from the following:		3
GGG 684	Selected Topics in Geospatial Intelligence	
GGG 689	Seminar in Geographic Thought and Methodology	
GGG 795	Seminar in Regional Analysis	
Colloquium		
GGG 900	Geography and Geoinformation Science Colloquium (complete twice)	2
Total Credits		5

Electives

Code	Course List Title	Credits
In consultation with the advisor, students select credits necessary to reach 72 total credits ¹		
1 At least half of the elective credits taken at Mason must be from GGS courses.		19-31

Dissertation Research

Students take 12-24 credits, with at least 6 credits in [GGG 999](#) Dissertation. After reaching candidacy, students must stay continuously enrolled [GGG 999](#) Dissertation until defending their dissertation.

Code	Course List Title	Credits
Select 12-24 credits from the following:		
GGG 998	Dissertation Proposal	12-24
GGG 999	Dissertation	
Total Credits		12-24

Dissertation Committee

All students will be assigned a temporary academic advisor when they first enroll in the program. No later than the end of the second year, each student should identify a dissertation advisor and form a doctoral committee. The committee will be chaired by a GGS tenure or tenure-track (**T/TT**) professor and be composed of at least **four members. 50% GGS faculty. GGS T/TT faculty should be at least 50% and be of plurality in the committee. At least one member should be a T/TT faculty member from another Mason department or program outside of GGS.** All members of the committee must be Mason Graduate Faculty and approved by the department's chair.

Candidacy Examination

After completing all required courses, each student must take a candidacy exam administered by the dissertation committee. The exam will have written and oral components. Its purpose is to determine whether the student has acquired adequate general knowledge in the selected subject area, as well as much more detailed knowledge of the specific research topic planned for the dissertation.

Dissertation Proposal and Advancement to Candidacy

After students have completed all required courses and passed the candidacy exam, they should prepare an acceptable dissertation proposal. After the dissertation proposal is approved and the appropriate paperwork is completed, the student will be advanced to candidacy.

Doctoral Dissertation

The degree will be awarded upon completion of the required coursework and successful defense of a PhD dissertation that makes an original and significant contribution to the field.

Retroactive
Requirements
Updates:
Plan of Study:

Additional Program Information

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

Courses offered via
distance (if
applicable):

What is the
primary delivery
format for the
program? Both Face-to-Face and Distance

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

Are you changing the total number of credits required for this program?

Are you changing the delivery format in any way (e.g adding an online option)?

Are you adding/removing a licensure option which was approved by SCHEV?

Will any portion of this program be offered at an off-campus location?

Are you adding significant new content areas to the program?

Will this program change affect any specialized accreditation?

Green Leaf Program Designation

Is this a Green Leaf
program? No

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: 214