Program Change Request

Date Submitted: 03/13/26 11:22 am

Viewing: SC-PHD-CSS : Computational Social Science, PhD

Last approved: 12/10/25 11:58 am

Last edit: 03/13/26 11:22 am

Changes proposed by: jbazaz

Catalog Pages
Using this Program
Computational Social Science, PhD

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

Yes

Requestor:

In Workflow

1. **CDS Chair**
2. SC Curriculum Committee
3. SC Assistant Dean
4. Assoc Provost-Graduate
5. Registrar-Programs

History

1. Oct 23, 2017 by clmig-jwehrheim
2. Feb 15, 2018 by rzachari
3. Jan 15, 2019 by Tory Sarro (vsarro)
4. Feb 23, 2021 by jriemen
5. Oct 1, 2021 by kunderwo
6. Apr 27, 2022 by Jennifer Bazaz Gettys (jbazaz)
7. Nov 11, 2022 by Jennifer Bazaz Gettys (jbazaz)
8. Apr 26, 2024 by Jennifer Bazaz Gettys (jbazaz)
9. Dec 10, 2025 by Jennifer Bazaz Gettys (jbazaz)

Name	Extension	Email
Estela Blaisten	5302	blaisten@gmu.edu

Effective Catalog:	2026-2027
Program Level:	Graduate
Program Type:	Doctoral
Degree Type:	Doctor of Philosophy
Title:	Computational Social Science, PhD
Banner Title:	Computational Social Sci PhD
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:	Computational & Data Sciences
Jointly Owned Program?	No
Is there an embedded degree as part of a program?	

Justification

What: The requirement of GRE scores for admission to this program is removed. Previously the GRE-GEN scores were required. All other admission requirements remain as currently listed in the 2025-26 catalog.

Why: The CDS Department has assessed that the GRE scores are not required for admission to the CSS PhD. This assessment was validated by a favorable majority vote of the CDS faculty.

Total Credits Required: Total credits: 72

Registrar's Office Use Only - Program Code:

SC-PHD-CSS

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 should have an undergraduate degree from an institution of higher education accredited by a Mason-recognized U.S. institutional accrediting agency or international equivalent with a GPA of at least 3.25. The undergraduate degree should be in one of the social sciences, computer science, engineering, or a relevant discipline, and undergraduate courses in these and related areas. Bachelor's degrees in the physical or biological sciences are also eligible, but applicants may be advised to take additional courses in social science or computer science as prerequisites to admission.
Minimal requirements also include one undergraduate course in calculus and knowledge of a computer programming language, preferably object-based.

Application Requirements

To apply for this program, prospective students should submit the George Mason University Admissions Application and its required supplemental documentation, and:

- A goals statement not to exceed 2,000 words,
- The names of two Mason faculty members who may be suitable advisors, and
- Two letters of recommendation received directly from faculty members or individuals with direct knowledge of the student's academic or professional capabilities. ~~capabilities, and~~
- ~~An official report of GRE-GEN scores.~~

GRE scores are not required for admission into this program.

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.

Academic Advising

During the first year, each student will form a graduate studies committee, called the first-year committee, consisting of the student's advisor plus two or three appropriately qualified individuals. The committee assists the student in designing a specific plan of study and evaluating the student's progress by the end of the first year. During the second year, the student forms a doctoral committee, with membership approved by the CSS program director. The committee will advise the student on preparing for the doctoral candidacy exams and preparing, developing, and defending the doctoral dissertation.

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

Core Courses

CSS 600	Introduction to Computational Social Science	3
CSS 605	Object-Oriented Modeling in Social Science	3
CSS 610	Agent-based Modeling and Simulation	3
CSS 620	Origins of Social Complexity	3
Total Credits		12

Extended Core Courses

Select 6 credits from the following:		6
CSS 625	Complexity Theory in the Social Sciences	
CSS 635	Cognitive Foundations of Computational Social Science	
CSS 645	Spatial Agent-Based Models of Human-Environment Interactions	
CSS 665	Complex Adaptive Systems in Public Policy	
CSS 671	Natural Language Processing for Complex Systems	
CSS 692	Social Network Analysis	
CSS 717	Verification and Validation of Models	
Total Credits		6

Discipline-based Courses

Select 15 credits of discipline-based social science courses in a specific area such as anthropology, economics, geography, history, linguistics, political science, or sociology, as approved by the student's advisor, to provide domain-specific knowledge.	15
Total Credits	15

Electives

Select 15 credits of electives or independent research, as approved by the student's advisor, to provide further substantive or methodological specialization as needed.	15
Total Credits	15

Students with a strong background in computing, for example, a prior MS in computer science, but weaker social science training will be required to use all or most of these electives in a substantive social science. Conversely, students with a strong background in social science, for example, a BS in economics, will be required to use most or all of these electives in computing courses.

Candidacy Examination

The candidacy exam is taken after students have completed all core requirements and a majority of additional coursework (18 plus 15 credits), which typically corresponds to the fifth semester in the program. The purpose of the candidacy exam is to assess the student's substantive and methodological knowledge in CSS as a whole and in the chosen focus area, the ability to integrate materials from different courses, and the potential for a successful dissertation. The exam consists of written and oral parts.

Dissertation Proposal

Upon passing the candidacy examination, each student shall prepare and, within a year, defend a dissertation proposal, written in the form of an extramural research grant proposal. The student shall develop the dissertation proposal in consultation with the dissertation committee. With successful defense of the proposal, a student becomes a PhD candidate.

Dissertation Research

Dissertation research credits are required in order to demonstrate doctoral-level originality and research excellence:

Select 24 credits from the following:		24
CSS 998	Doctoral Dissertation Proposal	
CSS 999	Doctoral Dissertation	
Total Credits		24

Example Dissertation Areas

Areas for dissertation research include, but are not limited to, the following:

- Agent-based computational economics: trade, finance, decision making under risk

- Computational political economy: voting, institutions, norms, inequality
- Computational linguistics: generative grammars, parsing, classifiers, inference
- Social network analysis: connectivity, structure, evolution of the Internet, social media, cyber warfare
- Computational anthropology: emergence of hierarchy, settlement patterns
- Computational political science: systems of government, conflict and war, cooperation
- Computational sociology: segregation, collective action, leadership, trust
- Complexity theory: power laws, potential theory, criticality, bifurcation
- Computational methodology: multiagent systems, evolutionary computation
- Agent-based computational geography: land use change, humanitarian assistance, urban modeling

Doctoral Dissertation Defense

The PhD dissertation is the detailed written report of an original and significant research contribution to computational social science. It is defended before the dissertation committee in a forum open to fellow students and interested faculty and staff. The dissertation committee recommends that the graduate faculty of George Mason University accept the student candidate for the PhD degree upon a successful defense and completion of any final revisions.

Retroactive Requirements Updates:

Plan of Study:

Program Outcomes

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? 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

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

Have you reached out to the Libraries to determine whether there are adequate resources to support your program? If not, please email Meg Meiman, Associate University Librarian for Learning, Research, and Engagement at mmeiman2@gmu.edu.

No

OAPI Use Only – Determination of SACSCOC Impact

Comments or Notes

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.eschtml%

Key: 26