

# Program Change Request

Date Submitted: 02/23/24 4:04 pm

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

Last approved: 11/11/22 2:27 pm

Last edit: 03/01/24 10:02 am

Changes proposed by: jbazaz

## Catalog Pages

### Using this Program

[Computational Social Science, PhD](#)

## No Longer

Anticipated closure

date (i.e., calendar

Rationale for

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

No

~~Department~~

**Effective Catalog:** 2024-2025

**Program Level:** Graduate

**Program Type:** Doctoral

**Degree Type:** Doctor of Philosophy

**Title:**

Computational Social Science, PhD

## Approval Criteria

1. What was the process used within your academic

2. Who was involved in approving the badge?

3. What evidence was used to identify need/demand

4. Please attest to the following statements regarding your

a. Have you ensured there are no other existing badges

b. Has CPE confirmed the proposed badge does not

c. Has the instructor(s) for this badge experience been

d. Is there a contact hour minimum?

e. Is an assessment required?

f. Does this badge provide a benefit for current or

## In Workflow

1. CDS Chair

2. SC Curriculum Committee

3. SC Assistant Dean

4. Assoc Provost-Graduate

5. Registrar-Programs

## Approval Path

1. 02/26/24 1:55 pm

Jason Kinser

(jkinser): Approved for CDS Chair

## 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)

If this badge is associated with another:

a. What is the organization, program, or department

#### Earning Criteria

Course:

Badge:

Participant:

Payment:

Portfolio:

Presentation:

Assessment:

Credential:

Education

Other:

Project:

Professional

Schedule/Registration:

Volunteer:

#### Skills Tag

Skills Tag

#### Badge Attributes

Please select one from each category:

Achievement Type:

Mastery Level:

Time Commitment:

Cost:

Industry Standards:

Recommendations:

#### Issuance information and Pricing

Pricing: See <https://cpe.gmu.edu/digitalbadgespricing/> for more information

Estimated Number of Badges Expected to be Issued:

Notes:

- All badge requests will be routed to CPE for review and approval. Please allow 7
- A Mason Digital Credentials Advisory Group may be developed to review badge

**Banner Title:** Computational Social Sci PhD

Is this a retitling of  
an existing

Existing Program

**Registrar/OAPI Use** Approved  
**Only – SCHEV**  
**Status**

**Registrar's Office**  
**Use Only –**  
**Program Start Term**

**Registrar/OAPI Use  
Only – SCHEV  
Letter**

**Registrar/OAPI Use  
Only – SACSCOC  
Status**

**Concentration(s):**

**INTO Major(s):**

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

**College/School:** College of Science

**Department /  
Academic Unit:** Computational & Data Sciences

**Jointly Owned  
Program?** No

**Participating**

**Participating**

**Justification**

What: Referring applicants to central admissions language and removing extraneous wording.

Why: To make the program more adaptable to changes in university policies.

## Catalog Published Information

**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 ~~in~~-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 **Application Requirements**

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. ~~To apply for this program, please complete the George Mason University Admissions Application.~~ The undergraduate degree ~~Eligibility~~ Applicants should be ~~have as background a bachelor's degree~~ in one of the social sciences, ~~sciences~~; computer science, engineering, or a relevant discipline, ~~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

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

- A goals statement not to exceed 2,000 words,
- The names of two Mason faculty members who may be suitable advisors,
- ~~Application Requirements 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. To apply, prospective students should complete the George Mason University Admissions Application, copies of official transcripts from each college and graduate institution attended, a current résumé, an expanded goals statement not to exceed 2,000 words, and the names of two Mason faculty members who may be suitable advisors.~~ Two ~~Applicants should also include two~~ letters of recommendation received directly from faculty members or individuals with direct knowledge of the student's academic or professional capabilities, and
- ~~capabilities.~~ An official report of GRE-GEN scores.

~~The letters must arrive directly from the senders. Applicants should also submit an official report of scores obtained on the GRE-GEN. TOEFL scores are required for all international applicants.~~

Program-Specific  
Policies:

## Policies

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

~~Reduction of Credit Students entering the doctoral program with a master's degree in a related discipline may request that the required credits for the doctoral degree be reduced by a maximum of 30 credits with approval of the director of graduate studies and the associate dean and in accordance with university policy. More information can be found~~

## ~~in AP.6.5.2 Reduction of Credits.~~ Transferring Previous Graduate Transfer of Credit into this Program

Previously earned ~~Students who have prior graduate coursework that has not been applied to another degree may request to have a maximum of 24 of these graduate credits transferred, with approval of the director of graduate studies and~~ relevant graduate credits may ~~the associate dean and in accord with university policy. More information can be~~ eligible for transfer into this program; details can be found in the ~~in AP.6.5.3 Transfer of 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

<a href="#">CSS 600</a>	Introduction to Computational Social Science	3
<a href="#">CSS 605</a>	Object-Oriented Modeling in Social Science	3
<a href="#">CSS 610</a>	Agent-based Modeling and Simulation	3
<a href="#">CSS 620</a>	Origins of Social Complexity	3
Total Credits		12

### Extended Core Courses

Select 6 credits from the following:	6
<a href="#">CSS 625</a>	Complexity Theory in the Social Sciences
<a href="#">CSS 635</a>	Cognitive Foundations of Computational Social Science
<a href="#">CSS 645</a>	Spatial Agent-Based Models of Human-Environment Interactions
<a href="#">CSS 665</a>	Complex Adaptive Systems in Public Policy
<a href="#">CSS 692</a>	Social Network Analysis
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

## Electives

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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

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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

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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

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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:**

**Honors  
Information:**

**Accelerated  
Description/Dual  
Degree  
Description:**

**INTO-Mason  
Requirements:**

**College  
Requirements &  
Policies:**

**Department /  
Academic Unit  
Requirements &  
Policies:**

**Program Outcomes**

### **Additional Program Information**

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

**Courses offered via  
distance (if  
applicable):**

**Indicate whether  
students are able**

**What is the  
primary delivery  
format for the  
program?**

Face-to-Face Only

**Does any portion of this program occur off-campus?**



No

Off-campus details:

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

No

Please explain:

Related

Departments

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

No

Please explain:

Are you adding or removing a licensure component?

No

Please explain:

## Additional SCHEV & SACSCOC Information

Is the content of the new program closely related to that of an existing approved program at the same instructional level (i.e., baccalaureate, master's, doctoral)?

Which existing approved program(s)?

Is this new program considered to be "advancing the degree level of a currently approved program" (i.e. existing content is at lower degree level, new content is at the higher degree level)

Which existing approved program(s)?

Is this new program considered to be "lowering the degree level of a currently approved program" (i.e. existing content is at higher degree level, new content is at the lower degree level)?

Which existing approved program(s)?

Is this a re-opening of a program that was closed to admission within the last five years?

Date of Program Closure

What are the methods of delivery for the program?

Does this program include a course/credit-based competency-based education delivery option?

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

**Which existing approved program(s)?**

**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

**What is the new method of delivery?**

**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

**Description of institutional impact:**

**Will any additional faculty be required?**

No

**Description of institutional impact:**

**Will any additional financial resources be needed?**

No

**Description of institutional impact:**

**Additional library/learning resources needed?**

No

**Description of institutional impact:**

**OAPI Use Only – Determination of SACSCOC Impact**

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**Comments or Notes****Green Leaf Program Designation**

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**Is this a Green Leaf program?** No

**Green Leaf Designation**

*Sustainability-focused academic programs require at least one green leaf course. Either that course is itself sustainability-focused or else the program requires a set of sustainability-related courses with aggregated*

**Relationship to Existing Courses**

**Relationship to Existing Programs**

**List sustainability-focused courses currently required in the degree**

**Sustainability-related academic programs either require at least one sustainability-related course or else offer any green leaf course as an option or elective \***

**List sustainability-related courses currently required in the degree**

**Does this program cover material which crosses into another department?**

No

**Impacted Departments**

**Additional Attachments** [Syllabus-CSS-635-2021.pdf](#)

**SCHEV Proposal**

**Executive Summary**

**Reviewer Comments**

**Additional Comments**

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

%wi\_required.eshtml%

**Attached  
Document**

Key: 26