Program Change Request

Date Submitted: 03/04/22 2:47 pm

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

Last approved: 10/01/21 8:57 am

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Changes proposed by: jbazaz

Catalog Pages Using this Program

Computational Social Science, PhD

In Workflow

1. **CDS Chair**
2. SC Curriculum Committee
3. SC Associate 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 Johanna Riemen (jriemen)
5. Oct 1, 2021 by Karen Underwood (kunderwo)

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

Yes

Requestor:

Name	Extension	Email
Karen Underwood	9298	kunderwo

Effective Catalog: 2022-2023

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 Approved

Status

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

Justification

What: Reducing letters of recommendation to two.

Why: To allow us to ease the path into the program while still receiving enough information to make an informed admission decision.

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 Graduate Admissions Policies.

To apply for this program, please complete the George Mason University Admissions Application.

Eligibility

Applicants should have as background a bachelor's degree 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

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. Applicants should also include **two** ~~three~~ letters of recommendation from faculty members or individuals with direct knowledge of the student's academic or professional capabilities. 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

For policies governing all graduate 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.

Transfer of Credit

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 the associate dean and in accord with university policy. More information can be found in AP.6.5.3 Transfer of Credit.

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 692	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
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

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 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.eschtml%

Key: 26