Program Change Request

Date Submitted: 11/16/22 10:47 am

Viewing: SC-PHD-CLIM : Climate Dynamics, PhD

Last approved: 03/14/22 9:12 am

Last edit: 11/16/22 10:47 am

Changes proposed by: jbazaz

Catalog Pages Using this Program

Climate Dynamics, PhD

In Workflow

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

History

1. Oct 22, 2017 by clmig-jwehrheim
2. Jan 29, 2018 by rzachari
3. Dec 9, 2018 by Barry Klinger (bklinger)
4. Jan 15, 2019 by Tory Sarro (vsarro)
5. Nov 30, 2020 by Jennifer Bazaz Gettys (jbazaz)
6. Feb 23, 2021 by jriemen
7. Mar 14, 2022 by Tory Sarro (vsarro)

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

Yes

Requestor:

Name	Extension	Email
Barry Klinger	9227	bklinger@gmu.edu

Effective Catalog: 2023-2024

Program Level: Graduate

Program Type: Doctoral

Degree Type:

Doctor of Philosophy

Title:	Climate Dynamics, PhD
Banner Title:	Climate Dynamics, 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:	Atmospheric, Oceanic, & Earth Sciences
Jointly Owned Program?	No

Justification

What: Not requiring the GRE.
Why: Many peer institutions are making the GRE optional because of questions about the usefulness and fairness of the GRE. We share these concerns and also do not want to lose qualified potential applicants by requiring the GRE.

What: Specify annual dissertation committee meetings during CLIM 998 and CLIM 999 and make timetable more explicit.
Why: New text about timetable and annual committee meetings codifies unofficial policy. Annual committee meetings will help students stay on track with dissertation and benefit from feedback from committee.

What: Miscellaneous changes to clarify language or to remind students of relevant Mason policies.
Why: To ease in student clarity and advising.

Total Credits Required:	Total credits: 72
Registrar's Office Use Only - Program Code:	SC-PHD-CLIM
Registrar/IRR Use Only – Program CIP Code	40.0401 - Atmospheric Sciences and Meteorology, General.
Admission Requirements:	

Admissions

University-wide admissions policies can be found in the Graduate Admissions Policies section of this catalog.
To apply for this program, please complete the George Mason University Admissions Application.
Applicants should have demonstrated a high aptitude for quantitative reasoning, applied mathematics, and physical science. 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 3.00 in undergraduate **work.** ~~work, and a GRE verbal plus quantitative score of 301 (1,100 on the old scale).~~
To apply, prospective students should submit a completed George Mason University Admissions Application, a current résumé, three letters of recommendation, an expanded goals statement, and two copies of official transcripts from each college and graduate institution attended. ~~An official report of scores obtained on the GRE-GEN should also be officially reported by ETS.The GRE requirement for admission to the doctoral programs can be waived if the student holds a master's degree from a regionally accreditedU.S.institution.~~TOEFL scores are required of all international applicants who have not completed a master's degree in the United States.
GRE-GEN scores are not required.

Program-Specific Policies:

Policies

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

Reduction of Credit

For students entering the doctoral program with a master's degree in a related field from an institution of higher education accredited by a Mason-recognized U.S. institutional accrediting agency or international equivalent, the number of required credits may be reduced up to 30 credits, subject to approval of the program faculty and the college's associate dean for student affairs. See AP.6.5.2 Reduction of Credits for more information.

Degree Requirements:

This is a Green Leaf program.
Students should refer to the Admissions & Policies tab for specific policies related to this program.

Fundamental Climate Science Courses

CLIM 610	Introduction to the Physical Climate System	3
CLIM 614	Land-Climate Interactions	3
CLIM 711	Introduction to Atmospheric Dynamics	3
CLIM 712	Physical and Dynamical Oceanography	3
CLIM 751	Predictability and Prediction of Weather and Climate	3
Total Credits		15

Core Computational Courses

CLIM 680	Climate Data	3
or CSI 690	Numerical Methods	
CLIM 715	Numerical Methods for Climate Modeling	3
CLIM 762	Statistical Methods in Climate Research	3
Total Credits		9

Climate Seminar

CLIM 991	Climate Dynamics Seminar (taken three times)	3
Total Credits		3

Electives

Select 21 credits of graduate-level electives, including CLIM courses and other relevant courses as approved by the graduate coordinator1.

CLIM courses	21
Total Credits	21

1 Including up to 6 credits of CLIM 796 or CLIM 996.

Eligibility for Qualifying Exams

Satisfactory progress in the program is demonstrated by adequate research progress (as attested by the advisor) and by the student attaining a B- or higher in all CLIM courses and on the final exams of the “Core Climate” courses (CLIM 610 Introduction to the Physical Climate System, CLIM 614 Land-Climate Interactions, CLIM 711 Introduction to Atmospheric Dynamics, CLIM 712 Physical and Dynamical Oceanography). If any of these conditions are not met, the director of the Climate Dynamics program convenes a faculty committee to recommend whether the student should continue in the program. The director makes the final decision based upon input from the committee. A student who is allowed to continue in the program may, in a later semester, retake any Core Climate final exam in which the student’s score was below B-.

To be eligible for CLIM 997 Doctoral Qualification, students must have received a B- or higher on the final exam of each of the four Core Climate courses. Students who have taken the equivalent of any of these courses must take the Core course’s final exam even if they do not take the course.

Qualifying Exams

Students take a qualifying exam by enrolling in CLIM 997 Doctoral Qualification. Students pass the exam by demonstrating an ability to analyze scientific problems, identify an open scientific question in climate dynamics, and outline a methodology to answer the question.

Students take CLIM 997 in their second spring semester in the program. Students who enter in the spring have the option of taking it in their 2nd or 3rd spring semester.

CLIM 997	Doctoral Qualification	3
Total Credits		3

Advancement to Candidacy

After the student has completed all coursework in CLIM 997 Doctoral Qualification, the Climate Dynamics **Program** Director decides whether the student continues in the doctoral program, based on performance in CLIM 997 and consultation with student's advisor and the instructors of CLIM 997 and Core Climate courses. **If** ~~To continue,~~ the **Director decides that** ~~student forms a dissertation committee by~~ the **student can continue in** ~~end of~~ the **doctoral program, then the student forms a dissertation committee by the end of the** following summer and thereafter enrolls **in** ~~in~~ CLIM 998 Doctoral Dissertation Proposal.

Students who continue in the doctoral program are expected to submit a paper to a peer-reviewed journal, and to the dissertation committee, before the start of the Spring semester following the **successful completion of CLIM 997 Doctoral Qualification.** ~~qualifier.~~ If this deadline is not met, then the student submits a progress report to the **dissertation** ~~thesis~~ committee at the end of each semester until the paper is submitted. In all cases, a student must satisfy the submission requirement before submitting and defending a dissertation proposal.

By the end of the student's third year, the student **should aim** ~~is expected~~ to present a Dissertation Proposal to their ~~thesis committee. The student enrolls in CLIM 998 Doctoral Dissertation Proposal while working on the~~ dissertation **committee.** ~~proposal, which will generally be an extension of the CLIM 997 proposal.~~ **If this deadline is not met, then the student convenes their thesis** ~~Once a dissertation~~ committee **towards** ~~approves the dissertation proposal and~~ the **end of their third year and presents a progress report.** ~~student completes all non-dissertation program requirements, the student is formally advanced to doctoral candidacy.~~ **By** ~~Dissertation Research and DefenseAfter advancement to doctoral candidacy,~~ the **end of** ~~student works on~~ the **student's fourth year, the student is expected to present a Dissertation Proposal to their thesis committee.** ~~dissertation while taking CLIM 999 Doctoral Dissertation.~~

Once ~~The degree's requirements will be fulfilled upon completion of the required coursework and approval of~~ a dissertation **committee approves the dissertation proposal and** ~~that makes an original and significant contribution to~~ the **student completes all non-dissertation program requirements, the student is formally advanced to doctoral candidacy and enrolls in CLIM 999 Doctoral Dissertation.** ~~field.~~ **Note that Doctoral students are expected to advance to candidacy within no more than six (6) years (AP.6.10.1 Time Limit).**

Dissertation Research and Defense

After advancement to doctoral candidacy, the student works on the dissertation while taking CLIM 999 Doctoral Dissertation. The student is expected to meet and present a progress report with their committee once a year while taking CLIM 999 Doctoral Dissertation. The degree's requirements will be fulfilled upon completion of the required coursework and approval of a dissertation that makes an original and significant contribution to the field. For both full-time and part-time students enrolled in doctoral programs, whether entry is post-baccalaureate or post-master's, the total time to degree will not exceed nine (9) calendar years from the time of first enrollment in the program as a doctoral student (AP.6.10.1 Time Limit).

No more than 21 combined credits from CLIM 998 Doctoral Dissertation Proposal and CLIM 999 may be applied toward satisfying doctoral degree requirements, with no more than 18 credits of CLIM 998.

Choose credits for the following courses in consultation with an advisor:		21
CLIM 998	Doctoral Dissertation Proposal	
CLIM 999	Doctoral Dissertation (minimum 3 credits)	
Total Credits		21

Retroactive Requirements Updates:

Plan of Study:

Program Outcomes

Program Outcomes

1. Demonstrate in-depth knowledge.
2. Conduct research.
3. Solve quantitative climate problems.
4. Solve quantitative fluid dynamics problems.
5. Solve quantitative conservation law problems.

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? Yes

Green Leaf Designation Sustainability-focused 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 substance equivalent to a sustainability-focused course.

Relationship to Existing Courses

Relationship to Existing Programs

List sustainability-focused courses currently required in the degree program:

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: 6