

Course Change Request

New Course Proposal

Date Submitted: 09/19/18 10:30 pm

Viewing: **CLIM 997 : Doctoral Qualification**

Last edit: 09/19/18 10:30 pm

Changes proposed by: bklinger

Programs
referencing this
course

[SC-PHD-CLIM: Climate Dynamics, PhD](#)

In Workflow

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

Approval Path

1. 09/20/18 8:24 am
Jim Kinter (ikinter):
Approved for AOES
Chair

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

No

Effective Term: Spring 2019

Subject Code: CLIM - Climate Dynamics

Course Number:
997

Bundled Courses:

Equivalent Courses:

Catalog Title: Doctoral Qualification

Banner Title: Doctoral Qualification

Will section titles vary by semester? No

Credits: 3

Schedule Type: Independent Study

Hours of Other Contact Hours per week: 3

Repeatable: May only be taken once for credit (NR)

Default Grade Mode: Graduate Regular

Recommended Prerequisite(s):
Permission of Instructor

Recommended Corequisite(s):

Required Prerequisite(s) / Corequisite(s) (Updates only):

Registrar's Office Use Only - Required Prerequisite(s)/Corequisite(s):

And/Or	(Course/Test Code	Min Grade/Score	Academic Level)	Concurrency?

Registration Restrictions (Updates only):

Registrar's Office Use Only - Registration Restrictions:

Field(s) of Study:

Class(es):

Level(s):

Degree(s):

School(s):

Catalog Description:

Students develop a project that demonstrates their potential to do scientific research. Each student either proposes a research project, or submits an original manuscript, that is suitable for a peer-reviewed scientific journal in the subject area of Climate Dynamics. Grading is based on an oral presentation and written document

Justification:

The requirements for the Climate Dynamics PhD Program are being modified to test students' ability to do research. The new exam is being made more rigorous by creating a full-semester course in which students

develop a research project in consultation with their advisors and which addresses criticism from the Climate Dynamics faculty. CLIM 997 constitutes the main process by which the faculty decides whether a student advances to doctoral candidacy.

Does this course cover material which crosses into another department? No

Learning Outcomes:

Attach Syllabus

[clim997syllabus4.pdf](#)

Additional Attachments

Staffing:

Tim DelSole is the instructor but any of the other 11 Climate Dynamics faculty in AOES could teach it.

Relationship to Existing Programs:

Relationship to Climate Dynamics Doctoral Program

A CLIM student who starts in Fall takes CLIM 997 in Spring of his/her second year. S/he is expected to do scientific research with the advisor during the previous semesters and summer. Ideally this research will have progressed enough that the student is ready to write a paper, which can be included in the CLIM 997 project, but the class can be passed without writing such a paper. The CLIM 997 proposal is likely to be part of the student's dissertation.

After passing CLIM 997, the student puts together a dissertation committee based in part on faculty interest during the presentations. The dissertation proposal will generally, but not necessarily, be an extension of the CLIM 997 proposal. The student is expected to submit the proposed paper to a peer-reviewed journal by the end of the subsequent Fall semester. If the paper is not submitted, the student submits a publication progress report at the end of every semester until the paper is submitted.

A student who gets a final grade of C in CLIM 997 has the option of completing an MS degree in either Earth Systems Science (subject to acceptance of application into program) or proposed Climate Science MS.

Relationship to Existing Courses:

Student must get a grade of at least B in CLIM 997 in order to enroll in CLIM 998.

Additional Comments:

**Reviewer
Comments**

Key: 15995

CLIM 997 Doctoral Qualification – Syllabus

Instructor: Timothy DelSole

Catalog Description

Students develop a project that demonstrates their potential to do scientific research. Each student either proposes a research project, or submits an original manuscript, that is suitable for a peer-reviewed scientific journal in the subject area of Climate Dynamics. Grading is based on an oral presentation and written document. **3 credits.**

Prerequisites

Permission Of Instructor.

Course Format

The course's **main activity** is to work on the research project, in consultation with his/her academic advisor. At the beginning of the semester, a few meetings will be scheduled to discuss best practices for conducting scientific research, writing good proposals, and interacting with other scientists.

The student presents an initial version of the proposal or research article to a **Faculty Review Panel** of AOES Climate Dynamics scientists, who provide feedback on the project. The student revises the project based on faculty feedback and presents the new version at a **Second Faculty Review Panel**, which also provides feedback.

After the Second Faculty Review Panel, the student submits a written **Final Document** research proposal or a manuscript research article. During final-exam period, the student makes an oral **Final Presentation** of the project (also referred to as **oral examination**) to the entire Climate Dynamics faculty.

Proposal Generation Process

The student is expected to **work with his/her advisor to formulate a paper idea** that is likely to be part of the student's doctoral dissertation. A reasonable starting point is a topic relevant to the grant that supports the student. The student's project may be based on the grant's project description, but the student is expected to make independent contributions to the project and, most importantly, to be able to defend the ideas on his/her own.

Part of the evaluation of the students will be based on how the student **uses Panel suggestions to improve the project**. The Second Panel will include faculty members who were not on the

First Panel, so to some extent it is a “clean slate.” Students should recognize that a different panel may react very differently to the same material.

Most students will have **already conducted research** under the advisor’s supervision. If the student project is a research proposal, it should briefly describe student’s past research results in the Climate Dynamics program. In some cases, the student’s previous research has been extensive enough to produce a draft of a publishable paper. This draft can be submitted as the final document for the course

Expectations and Grading

Course grade is based on (1) the final document and (2) the final presentation.

The **final document** should contain a convincing proposal for a publishable scientific paper (see Section 6). If student has already obtained results from the proposed research, these should also be included. Document length is 1000-2000 words (1000-3000 words if substantial results are included), excluding references, figure captions, and tables.

Optional manuscript: Final Document may be a manuscript that has a viable chance of publication (possibly with revision) in a peer-reviewed journal. It must conform to the word limit of the journal intended for submission.

The Final Document and Presentation should provide **evidence of the student’s ability** to:

1. critically read scientific literature
2. formulate physically consistent expectations
3. analyze climate data sets
4. identify open scientific questions
5. design an investigation to answer a scientific question
6. explain ideas to other scientists
7. incorporate feedback from other scientists to improve their work.

Grades are assigned as follows:

- **A** – meets expectations described above, and submits a manuscript as described above.
- **B** – meets expectations described above
- **C** – does not meet expectations described above