Program in Atmospheres, Oceans, and Climate

DOCTORAL PROGRAMS
in ATMOSPHERIC SCIENCE and
in PHYSICS AND CHEMISTRY OF CLIMATE

GENERAL EXAM AND THESIS

3/31/00

Purpose of the General Examination

The purpose of the General Examination is to enable the faculty to assess the candidate's potential for a successful thesis and scholarly career, as evidenced by demonstration of the qualities of imagination, discrimination, initiative, and energy, supported by a sound and broad background of knowledge in atmospheric science/physics and chemistry of climate.

Timing of the General Examination

The examination is offered normally once each year in the last half of May and candidates are expected to take the Examination no later than the end of their fourth regular semester of graduate study. In sufficiently extenuating circumstances, however, a student may request to take the examination in January instead of May and/or to delay the examination until the end of the fifth semester. An application to take the normal examination in May should be filed in the EAPS Education Office in early April, or as announced. Requests to take the exam at different times should be directed to PAOC General Examination Committee (PAOC-GEC).

Role of the Advisor

The student's faculty advisors will monitor his/her progress and guide the student's choice of courses so that he/she is exposed to a broad selection of subjects in addition to a concentration of interest. Course requirements for both programs—Atmospheric Science and Physics and Chemistry of Climate—are outlined in the "Courses" handout for each program. Registration must be discussed with the advisors prior to formal approval on registration day by the Graduate Registration Officer. An advisor initially assigned to the candidate may be replaced on the initiative of either the advisor or the student.

The Examining Committee

For each program, there will be a "core committee" of three faculty members, to be appointed by PAOC-GEC. Each student will then be examined by a committee of 5*, comprised of
- the core committee
- the advisor
- one other faculty member, to be nominated by the student, in consultation with the advisor.
*(or 4, if the advisor is a member of the core committee.)
Form of the Examination

The General Examination consists of three parts:

1. A research paper on a subject of the candidate’s choice
2. A four-day take-home written examination
3. An oral examination by the examining committee

The research paper will be available to the examining committee at least ten days before the scheduled date of the written examination. In it, the candidate will identify and describe a significant problem or suggest a meaningful hypothesis which can be studied either theoretically, experimentally, by analysis of existing data, or by a combination of these means, and will give some indication of a feasible avenue of attack. The paper may also contain preliminary or even complete results for the problem chosen, but this is not required. The paper should not exceed 25 pages (typed, double spaced) in length. The student may consult with the faculty and others during the preparation of the research paper, but the major specific ideas and their development must be his or her own.

The four-day written examination will be a take-home examination comprising one or more questions. These questions will test both the candidate’s breadth of knowledge and his or her ability to synthesize knowledge from different areas. The questions will be formulated by a special faculty committee appointed by PAOC-GEC. Some choice in the questions may be available (e.g., answer 3 out of 4 questions). The answers will be due 96 hours after distribution of the examination. The answers should not total more than 20 pages in length and should be typed or clearly hand-written in ink. The candidate may use library and other facilities but must not consult with others, except to arrange for typing.

The oral examination will be administered by the examining committee as soon as it has had time to study the research paper and the answers to the four-day examination, ordinarily within a few days. The candidate will present the research paper to the committee; the committee will examine the candidate on the material submitted and also more broadly on other aspects of the subject area (atmospheric science or physics and chemistry of climate).

Outcome of the Examination

At the faculty meeting following the oral examinations, the core committee will report to the faculty and make recommendations as to the examination’s outcome in each case. The final decision, however, will rest with the faculty as a whole. This decision will be based on all aspects of the candidate’s academic preparation, including performance in required and other courses, and not solely on the written and oral material derived directly from the General Examination. The result of the examination will be communicated to the student by the chair of PAOC-GEC.

If the candidate is found to have failed the General Examination, he/she may repeat it the next time it is offered. The faculty may or may not recommend that the candidate repeat the examination. A student who continues despite an adverse recommendation will command a lower priority for financial support under the purview of the department. Continued registration as a doctoral candidate will be refused for those who fail to pass the Examination on the second attempt.
Thesis Proposal

The purpose of the thesis proposal is to determine the worthiness and feasibility of the proposed research and to establish willingness of one or more faculty members to supervise the thesis. The proposal is a document in which the candidate outlines the work he/she plans to undertake for the thesis. It must include, in addition to the components contained in the research paper, a well thought-out discussion of the proposed method of attack. In certain cases, it may be necessary to carry out some of the first steps in the research in order to demonstrate the feasibility of the approach to the problem. The student should consult extensively with his or her advisors and other appropriate faculty members during the preparation of the proposal. The proposal should represent a serious attempt to anticipate the course of the work, but should not be amplified into a miniature version of the thesis.

The proposal will be judged by the student’s thesis committee, which is to be selected by the student in consultation with the advisor, and whose membership may change as the student’s work evolves. The proposal must be submitted to the thesis committee no more than six months after the candidate passes the General Examination. The committee will accept the proposal if it is satisfied that the proposed research is feasible and worthwhile, that it demonstrates the candidate’s potential for making a creative contribution to the field, and that arrangements for its supervision and execution can be made.

Monitoring of Thesis Progress

After the thesis proposal has been accepted, the student’s thesis advisor has the primary responsibility for monitoring the student’s progress on a month to month basis. In addition, at least once each year the student shall meet with his/her thesis committee so that they may review his/her progress. These meetings are open to the rest of the faculty. After the bulk of the thesis research has been completed, but before the thesis has been written, the candidate must give a seminar on his/her research open to all PAOC members. The thesis should be completed within ten regular semesters after the candidate entered graduate school. A student may petition for additional time, on a semester by semester basis, but beyond a total of twelve semesters he/she will not receive financial support as a teaching or research assistant.

Thesis Defense

The purpose of the thesis defense is to determine whether the student has, in fact, been able to carry out a program of self-directed research of a creditable standard, and whether he/she is capable of presenting his/her results in a coherent form. The defense will be scheduled 10 or more calendar days after submission of the thesis. Responsibility for scheduling the defense, obtaining a proper quorum of faculty members, and arranging for the reading of the thesis lies with the thesis student.

Exceptions

Any of the procedures outlined above may be set aside by the Program Director in consideration of sufficiently extenuating circumstances.