

Atmospheric Science Graduate Group (ASGG)
Guidelines for the Ph.D. Qualifying Exam

“The primary purpose of the Qualifying Examination (QE) is to validate that the student is academically qualified to conceptualize a research topic, undertake scholarly research and successfully produce the dissertation required for a doctoral degree. The QE must evaluate the student’s command of the field, ensuring that the student has both breadth and depth of knowledge, and must not focus solely on the proposed dissertation research. In addition, the QE provides an opportunity for the committee to provide important guidance to the student regarding his or her chosen research topic.”

UC Davis Graduate Council

As discussed in the Atmospheric Science Graduate Degree Requirements, the Qualifying Examination (QE) for the Ph.D. degree has three parts: (i) a Written Examination, (ii) a Prospectus, and (iii) an Oral Examination. The parts must be taken in order and the exam is normally started after completion of all required Breadth and Depth coursework as described in the Degree Requirements. Students are encouraged to take the Written Examination by the end of their second year and to complete the Oral Examination within six months after successfully completing the Written Examination. The QE should be taken early enough that students are advanced to candidacy by the end of the 9th quarter of residency (excluding summer terms). ASGG guidelines on the three portions of the QE, as well as the requirements of Graduate Division, are given below.

A. Initial Requirements.

- a. Eligibility. To be eligible for the Qualifying Examination the student must have satisfied all program requirements (e.g., course work), have removed all deficiencies, and must have at least a "B" average in all work undertaken in graduate standing. The student must be registered the quarter in which any portion of the Qualifying Examination is taken.
- b. Application. The student submits an [Application for Qualifying Examination](#) to the Graduate Adviser or program chair at least six weeks prior to the written examination date. It takes Graduate Studies two to three weeks to process the application. Under no circumstances should a student take the Qualifying Examination before receiving formal notice of Admission to the Qualifying Examination from the Dean of Graduate Studies.
- c. QE committee membership. The committee should be composed of 5 members, including 3 or more members from the ASGG and at least 1 member from outside of the group. The Graduate Adviser, with the student’s concurrence, nominates faculty to serve. The Committee is then appointed by the Dean of Graduate Studies. A member of a [Qualifying Examination Committee](#) or [Doctoral Dissertation Committee](#) must have achieved a level at least equivalent to the degree for which the student is aiming. The following may serve:
 - All voting members of the Academic Senate, including Lecturers with Security of Employment and Professors in Residence;

- Upon special written request of the Graduate Adviser and approval of the Dean of Graduate Studies, lecturers and staff engaged in continuing teaching and research activity;
- Members of graduate group program faculty recommended by the Graduate Adviser to serve on advanced degree committees for students of that group.

Normally, only one member from the second or third category may be appointed to serve on a single advanced degree committee. It is possible, under some circumstances, to suggest a committee member from outside the University of California who has special expertise and qualifications. The student's adviser must submit a brief statement indicating the appointee's affiliation and title, degrees held, and describing the special expertise that cannot be duplicated on the campus. A Curriculum Vitae must also be submitted.

- d. QE Committee Chair. The faculty member who will serve as chairperson of the student's dissertation committee (i.e., the Major Professor) can serve on the Qualifying Committee but may not be the chair.

B. Guidelines for the Qualifying Examination

1. Open Book Written Examination

- a. Format. The exam will typically consist of approximately five questions, which can be quantitative, qualitative, laboratory related, and/or computational (e.g., requiring the writing and/or running of computer code). The questions will be on topics related to the student's preliminary research results, her/his course work in Depth subject areas and general atmospheric science. These topics and areas should be indicated on the student's Application for Admission to the Qualifying Examination that is approved by the Dean of Graduate Studies. The difficulty of the exam questions is expected to range from general knowledge, to that of upper division or graduate course midterm or final exam questions, to more technical research questions. The QE Committee Chair will solicit and compile the questions from all committee members. At least 2 weeks prior to the exam the QE Committee Chair will inform the student of the format of the exam. This information includes the time available to complete the exam (8 hours is the maximum that may be required), the number and types of questions, general topic areas, and any suggested books or other material that the student should bring to the exam. Typically students will be allowed to bring textbooks for each of the major areas to be covered on the exam.
- b. Location and timing. The Written Exam should be taken on the main UCD campus, in a location agreed upon by the student and Committee. The student should reserve this room well in advance of the exam. During the Exam the student is allowed to consult the materials permitted by the Committee, but the student is not allowed to discuss the Exam, or related material, with any student, faculty member, or other person.
- c. Grading. Each member of the Committee will grade as many questions (in whole or part) that she/he chooses. The final score for each question on the Exam will be a composite

of the grades from each committee member that graded that question. The overall score on the Exam is then determined from the sum of the grades on individual questions. The Committee will assign an overall grade of pass, “pass with conditions”, or fail. “Pass with conditions” may require the student to satisfactorily complete specified coursework or independent study to make up for deficiencies prior to taking the Oral Examination. Students that fail the Written Exam may retake it once, generally within a year of the original Exam.

- d. Archive of Exams. After the completion of the Exam, the committee chair is encouraged to give a copy of the exam questions to the Graduate Adviser of the ASGG. These archived Exams will be available for browsing or copying by students and faculty in the Graduate Group.

2. Written Prospectus

The Ph. D. Prospectus should contain approximately 10 pages of double spaced text. The prospectus should include: an introduction to the topic (including a survey of the relevant literature), a hypothesis or set of questions to be addressed, methods to be used to address the hypothesis/questions, any preliminary results, cited references, and a biographical sketch (e.g., in the NSF style). The biographical sketch, reference list, figures, and tables do not count towards the 10 page guideline. The Prospectus must be submitted to the Qualifying Examination Committee at least two weeks prior to the date of the Oral Exam.

3. Oral Qualifying Exam

- a. Format. The oral QE will include two parts. The first part is a student presentation of the prospectus, which should be prepared as approximately a 20 – 30 minute talk. The actual presentation will take longer because of questions from the committee. The second part of the exam will be oral questions by the Committee and interested faculty regarding the student’s prospectus, general knowledge of atmospheric science, depth area of study, and any follow up questions related to the Written Exam. The total length of the Exam should be approximately three (3) hours. Students should not provide any refreshments to the Committee during the Exam.
- b. Location and timing. The date and time for the Oral Examination should be set by the student in consultation with her/his committee members at least one month in advance. The student is responsible for reserving a room for the Exam.
- c. Participation by other faculty. The Oral Examination is run by the QE Committee Chair with only the student and entire committee present. Non-voting faculty observers may be invited with the unanimous consent of the Committee and student.
- d. Grading. The QE Committee shall evaluate the oral portion of the qualifying exam based upon the following expectations for the student: (i) a clear presentation that includes background information and the significance of the research area, clearly stated research goals, methods for addressing these goals, and any preliminary results, (ii) a mastery of

the material related to the prospectus as well as material from Breath and Depth coursework and general atmospheric science, and (iii) the ability to answer questions to the satisfaction of the committee members.

4. Evaluation of the Overall Qualifying Exam

Following completion of the Oral and Written portions of the Examination, the QE Committee will assign a grade of Pass, Not Pass, or Fail for the overall Qualifying Exam.

- a. Pass. Upon successful completion of the examination, the chair of the Qualifying Examination Committee will provide you with an Application for Advancement to Candidacy (Plan A). When it is filled out and signed by the Graduate Adviser and your major professor, you pay a candidacy fee at the Cashier's Office and return the form to Graduate Studies. When you advance to candidacy you will form a Dissertation Committee.
- b. Not Pass. With this grade the Committee will require that the student retake all or part of the Examination within a specified time period or that she/he completes other specific requirements related to issues or deficiencies identified during the Examination. Students that receive a Not Pass on the Qualifying Exam may retake it once. This second Examination will be graded as either a Pass or Fail, but may not be graded as a Not Pass.
- c. Fail. A grade of Fail on the Qualifying Examination ends the doctoral work of the student.