



Earth & Atmospheric Sciences

EARTH &  
ATMOSPHERIC  
SCIENCES

PURDUE  
UNIVERSITY

## GRADUATE PROGRAM REGULATIONS SPRING 2012

### I. Introduction and General Policies

The Earth and Atmospheric Sciences (EAS) Department offers graduate programs leading to the Master of Science and Doctor of Philosophy degrees in atmospheric and solid-earth geosciences. A majority of the research conducted within EAS can be categorized by three research foci: Atmosphere Surface Interactions (ASI); Climate and Extreme Weather (CLEW), and Geodynamics and Active Tectonics (GAT). A description of each of these areas can be found on the EAS web site. These programs are designed to develop a broad understanding of physical, chemical, and biological processes occurring in the Earth's atmosphere, oceans, surface and subsurface. Specialization in a specific area is provided by advanced courses, independent study, and thesis research. Owing to the inherent interdisciplinary nature of the EAS Department's programs, students enter graduate study with a variety of academic backgrounds. It is recognized that this broad variation requires the development of individualized programs tailored to meet the needs of a specific student.

General regulations and requirements established by the Purdue University Graduate School and published Graduate School *Bulletin* apply to all graduate students in these programs.

This document is a statement of internal regulations and policies applicable to the graduate programs offered by the Department. These regulations and policies have been adopted to provide a necessary degree of development of programs that reflect the differing backgrounds and specializations among students. Concurrently, these rules allow great flexibility for the development of programs that reflect the differing backgrounds and specializations among students. The regulations and policies are intended to insure a high level of performance by all individuals granted advanced degrees, thus maintaining the overall quality of the programs.

## II. Progress Toward Completion of Degree

1. The Graduate Secretary will send out the checklist at the beginning of each semester to the student with a copy to his/her Advisor. The checklist is a list of goals and regulations each student will be expected to achieve; this checklist is useful for students to gauge their progress toward completion of their degree in a timely manner. It is the student's responsibility to see that each of the goals are met by the end of the semester in which they are listed.
2. A written statement outlining the student's research progress will be prepared by the student and given to their Advisor for his/her signature. Advisors will then read over the statement and may or may not provide comments of their own. The Advisor will then sign off on the statement and turn it in to the Graduate Secretary by the last day of classes. The written statement will report on the goals and expectations agreed upon by the advisor and the advisee discussed at the beginning of the semester. It should also include, in outline form, the following data:
  - a) Scholarships/Fellowships (applied for/received)
  - b) Awards/Grants (Internal) (applied for/received)
  - c) Awards/Grants (External) (applied for/received)
  - d) Publications (submitted/in review/published)
  - e) Presentations

Additionally, the department requires the attendance at the following Purdue University Graduate School Responsible Conduct of Research (RCR) Workshops. The availability these workshops will be set at the beginning of each semester.

- 1) Research Integrity
  - 2) Ethical Writing
  - 3) Copyright
  - 4) Intellectual Property
  - 5) Other
    - a) EA/EO Workshop
    - b) Other?
3. For first year students who may not yet defined a research direction, documentation on research progress could include coursework, TA performance, attendance at departmental seminars, presentations at the graduate student's brown bag luncheons, etc.
4. For students with TA funding, a self-assessment written statement on TA performance shall be prepared and given to their Course Instructor for his/her signature. The Course Instructor will then read over the statement and may or may not provide comments. The Course Instructor will sign off on your statement and turn it in to the Graduate Secretary by the last day of classes. For the self-assessment you may wish to include the following:

- a) Office hours kept
  - b) Grading assignments
  - c) Lectures prepared
  - d) Your comments on the TA experience in general
  - e) Other?
5. Research progress, as outlined in the checklist, will be considered in departmental funding decisions made by the Graduate Committee.
  6. Students not fulfilling each requirement in the semester they are listed, must petition the Graduate Committee for continuation in the program.

### **III. Financial Assistance**

#### **A. General**

1. The application for admission also serves as the application for financial assistance. Financial aid is usually automatically considered during review of the applicant's file. When financial assistance is available, a recommendation that an applicant be supported will be made to the Department Head by the Graduate Committee. When assistance is approved by the Department Head, the applicant will be notified as to the amount and type of aid offered and provided with a short description of the duties involved. Notification of an offer of financial assistance may either be incorporated with notification of recommendation for admission to the University Graduate School, or may be provided separately at a later date.
2. Support normally is offered on either an academic- or calendar-year basis, depending on the type of position. Support is normally continued from semester to semester based on satisfactory academic progress in your program of study, satisfactory performance in your assigned duties, and completion of the semester statement.
3. Continuation of support is subject to continued availability of funds.
4. Most RA or TA appointments are one-quarter FTE or one-half FTE appointments. A one-quarter-time TA or RA appointment includes 10 hours per week of teaching- or research-related duties. A one-half-time TA or RA appointment includes 20 hours per week of teaching- or research-related duties.
5. Graduate students normally will not be allowed any combination of support totaling more than three-quarter FTE (Full-Time Equivalent), particularly if any part of the appointment includes teaching duties. Exceptions allowing 1.0 FTE during the summer session may be made in unusual circumstances.

## B. Teaching Assistantships

1. A student awarded a Teaching Assistantship (TA) *must be in residence at least one week prior to the start of classes*. Teaching Assistants *must participate in a TA Orientation short course*, coordinate with the faculty member responsible for the course in which they are assisting, and make necessary preparations to begin their teaching duties.
2. A student for the Master of Science degree can serve as a TA for a maximum of *four semesters* of one-half time FTE Fall or Spring semester appointments. A student in the Doctoral degree program can serve as a TA for a maximum of *seven semesters* of one-half time FTE Fall or Spring semester appointments. Semester limits on TA support for students who advance from the Department's Master's program directly into the Doctoral program without receiving a Master's degree will be determined on a case-by-case basis.
3. Renewal of TA support or granting of exceptions to the maximum limits will be determined on a competitive process based on documented performance in TA responsibilities and research, the availability of funds and needs of the Department, and on the progress of the student toward timely completion of the degree objectives. Documentation will include presentations at national meetings, publications, student grants, EAS Student Expo presentations, etc.
4. A graduate student whose cumulative GPA falls below 3.0/4.0 for two consecutive semesters will not be allowed to continue as a TA. He/she may be re-appointed as a TA once a cumulative GPA of 3.0/4.0, or greater, is re-established.
5. PhD candidates are encouraged to have a TA appointment with classroom instruction duties for at least one semester during their graduate program.
6. A few Summer TA positions are available. If you are appointed as a TA for the summer semester, you must be registered for a minimum of three research or class credits.

## C. Research Assistantships

1. Research Assistantships are recommended by the Principal Investigator (PI) or Project Director (PD) of a funded research program. Normally, the PI/PD will serve as the RA's Major Professor.
2. RA's are required to carry out research activities as directed by the PI/PD.
3. If you are appointed as a RA for the summer semester, you must be registered for a minimum of three research credits.

## IV. Major Professor and Advisory Committee

### A. General

1. At the time of recommendation for admission, the applicant is appointed a temporary advisor. The temporary advisor works with the incoming student during the first semester, helping to select initial courses, providing a general orientation on policies and procedures, and assisting in identifying the student's research skills and interests.
2. In many cases, a student's temporary advisor will become their Major Professor. By the end of the first year, students should have chosen a Major Professor and committee. If it is determined that a student's interests more closely relate to those of another faculty member, however, the student may request that this latter faculty member serve as his/her Major Professor. A student receiving RA aid should be aware that such a change may require a concurrent change in financial support. Student's choosing to change their Major Professor after their first year must have approval by the Graduate Committee.
3. Responsibility for maintaining the overall quality of graduate programs rests ultimately with faculty members who agree to serve as Major Professors and/or as members of the Advisory Committee. The University Graduate School requires that each student's progress be reviewed each semester. Thus, each student must meet formally with the advisory committee at least once each semester. Should a student consistently fail to perform on a level satisfactory to the Advisory Committee, he/she will be asked to discontinue graduate study at Purdue University.
4. The Major Professor and members of the Advisory Committee are formally designated at the time of submission of the Plan of Study [*see Section V(B)I*].

### B. The Major Professor:

1. Is selected by mutual agreement between the student and faculty member.
2. Directs the research, serves as thesis advisor, and provides academic guidance and counseling.
3. Serves as a member and chair of the student's Advisory Committee.
4. Assists in formulation of, and concurs with, the plan of study filed with the Graduate School.
5. Coordinates the examination process, to include compiling questions for and administering the written examinations.
6. Is responsible for preparing and submitting the report forms on examinations that are required by the University Graduate School.
7. The Major Professor will have the added responsibility of assuring that the final thesis meets the stylistic requirements adopted by the department and the Graduate School.

### C. Advisory Committee

1. The Advisory Committee is selected by mutual agreement between the student, the Major Professor, and members of the faculty who agree to serve, as requested by the student.
2. For a master's student, the Advisory Committee consists of at least three (3) members. For a doctoral student, the Advisory Committee will consist of at least four (4) members, one of whom must be either from outside the student's specialty area or external to the EAS Department.
3. The functions of the Advisory Committee include:
  - a) advising the student on matters of academic and research interest,
  - b) review and evaluation of the student's progress each semester,
  - c) assisting in preparation of, and concurring with the plan of study,
  - d) review and comment on the writing of the thesis,
  - e) examining the student through the written and oral examination process [*see Section V(B)3*],
  - f) making a final recommendation concerning the awarding of the degree,
  - g) notifying the appropriate graduate students of the faculty member's extended absences from campus, so that the students can schedule the necessary examinations or request alternate members to serve on the Examining Committee.
4. In decisions of the Advisory Committee, a simple majority rules.

### D. Examining Committee

1. For all M.S. and Ph.D. oral exams (M.S. thesis defense, Ph.D. oral Preliminary Examination and Ph.D. oral thesis defense), the Examining Committee (normally the student's Advisory Committee, although the Dean of the Graduate School and the Department Head may name additional members) shall select one of its members to serve as Chairperson of the oral examination. The student's Major Professor (Chairperson of the Advisory Committee) is not eligible to serve as Chairperson of the oral examination.

### E. Core Competency Requirements

A majority of the research conducted within EAS can be categorized by three research foci: Atmosphere Surface Interactions (ASI); Climate and Extreme Weather (CLEW), and Geodynamics and Active Tectonics (GAT). A description of each of these areas can be found on the EAS web site. These foci integrate concepts across numerous fields including Atmospheric Sciences, Ocean Sciences, Geology, Geophysics, and Biogeochemistry.

- a) Atmospheric Sciences and Oceanic Sciences: All candidates in the atmospheric science areas will demonstrate a satisfactory working knowledge of synoptic and dynamic meteorology, and of atmospheric physics before the degree is awarded. For students entering the Master's program whose previous academic work was in other fields,

development of this background will usually be accomplished by successful completion (letter grade of B or better) of appropriate courses in the atmospheric sciences program.

- b) Geophysics, Geology, and Biogeochemistry: Within geosciences research areas there are a wide range of specialties and we encourage students from other fields of study to enter our graduate program. Incoming graduate students should have a BS degree in one of the physical sciences (chemistry, physics, biology, geology). *Students will work with their advisory committee* to ensure that they complete an approved program of coursework in their area of specialization.
- c.) Earth System Science: Incoming graduate students should have a BS degree in one of the physical sciences (chemistry, physics, biology, geology). Course work should be tailored towards those subjects that pertain to the students M.S or PhD. thesis research. Within geosciences there is a wide range of specialties. Students will work with their advisory committee to ensure that they complete a program of coursework in geoscience approved for their area of specialization. A satisfactory working knowledge in the hydrologic cycle, biogeochemical and ecological systems, and climate is mandatory. We encourage students to tailor their graduate course programs according to their future plans and interests.

## **V. The Master of Science Program**

### **A. General**

1. It is expected that most Master's students will complete the requirements for the degree in one and one-half to two and one-half calendar years. Students with deficiencies in mathematics and/or physical science, or departmental undergraduate core courses may take up to three (3) years to complete their programs.
2. The maximum allowable time for completion of requirements for the Master's degree is four (4) years. Students who do not finish within four years must file a written request with the Graduate Committee to be allowed to continue in the graduate program.
3. At least one-half of the total credit hours used to satisfy degree requirements must be earned in residence on the Purdue campus where the degree is to be granted. At least 30 total credit hours are required.
4. Maximum credit loads (academic course credit and research credit) are established by the University Graduate School. A normal, full-time load for a graduate student is 9 to 18 credit hours per semester (9 credits during the summer).
5. A student in a Master's program is expected to maintain a minimum cumulative GPA of 3.0/4.0. Failure to do so will result in the student being identified as "LOW" in academic standing by the University Graduate School. Students so identified will not be awarded a degree. A student remaining in "LOW" academic standing for three (3) consecutive semesters will be notified by the EAS Graduate Committee to terminate their program.

6. All Master's students are required to register for 1 semester of EAS 691 (seminar course). Student must attend and write a brief summary of at least seven (7) seminars attended per semester.
7. It is required that each Master's student will present a seminar, based on his/her thesis research, to the faculty, graduate students and other interested individuals.
8. Research *in absentia* is not allowed.
9. For the semester in which the degree is to be awarded, domestic students must be registered for a minimum of one hour of research credit. International students must be registered for a minimum of nine hours of research credit unless excused by the University Graduate School.

## B. Specific Requirements

1. *Plan of Study*: Completion of an approved plan of study is required.
  - a) An appropriate plan of study will be drawn up by mutual agreement between the student, their Major Professor, and the Advisory Committee.
  - b) The plan will reflect that a thesis must be prepared and indicate a subject area and/or working title.
  - c) The plan must be prepared by the student and submitted for approval prior to the end of the second (2nd) semester in residence. The approval procedure will be as prescribed by the University Graduate School. Access to the electronic Plan of Study Generator (POSG) is via SSINFO.
  - d) An approved plan of study admits the student to candidacy for the Master of Science degree, and allows him/her to take the written examination. To complete an approved plan of study a candidate must complete each course used for fulfilling credit requirements with a letter grade of B or better, and have an overall GPA of 3.0/4.0, or better.
  - e) The minimum number of course credits (excluding thesis research credits, EAS 698) for the M.S. degree is 24. The courses should generally be 500-level, or above, but a maximum of six (6) credits at the 300-400 level are allowed. A maximum of six (6) credits of independent study are allowable in the 24 credit minimum. At least six (6) credits are to be from outside of the student's major area of study. Students must take a minimum of nine (9) credits in the EAS department.
2. *Thesis*: Submission of an acceptable thesis is mandatory.
  - a) The thesis topic will be determined by mutual agreement between the student and the Major Professor, and approved by the members of the student's Advisory Committee.
  - b) The thesis format will be as follows: *[the Thesis/dissertation Office Web site can be accessed at: <http://www.purdue.edu/GradSchool/thesis.html>]*



### University Format Requirements:

Seven different format items will be reviewed by the staff in the Library Thesis Format Office: 1) paper requirement; 2) typeface and quality; 3) spacing; 4) margins; 5) page numbering; 6) title page; and 7) abstract. However, these items will no longer be reviewed prior to the request for appointment of the student's final examination committee. Instead, this review will take place at the time the student's thesis or dissertation is deposited at the library, after all changes and modifications requested by the student's Examining Committee have been made.

### Departmental Format Requirements:

The thesis shall consist of a format consistent with a journal article manuscript in one of the following journals and using the format described in the style manual for that journal:

Journal of the Atmospheric Sciences  
Journal of Geophysical Research  
Bulletin of the Geological Society of America

If there is overlap between departmental style specifications and university format requirements, the University requirements must be satisfied.

The responsibility for review of the Departmental Format requirements will be assigned to the Chair of the student's Advisory Committee. This individual will have the added responsibility of assuring that the final thesis meets the stylistic requirements adopted by the department.

- c) Copies of the approved thesis will be provided to the Department (routed through the Department Head to the Department Library), the Major Professor, and other members of the Advisory Committee, and as required by the University, the Graduate School, and the Advisory Committee.
3. *Final Examinations:* It is required that both a final written examination and an oral defense be successfully completed. They will normally be given by the Examining Committee (normally the student's Advisory Committee) during the semester in which the degree is to be awarded. The Department Head may name an additional member to the student's Examining Committee. If the committee unanimously decides to forgo the written exam the successful completion of the MS can be based upon the successful completion of the thesis document and the oral defense.
- a) Written Examination
    - 1. A student will become eligible for the written examination when, in the opinion of the Major Professor and the Advisory Committee, the student has made satisfactory progress towards completing the academic requirements of the approved plan of study and has his/her

thesis work well in hand. The exam must be successfully completed at least four (4) weeks prior to the oral defense.

2. The written examination will consist of questions assembled by the student's Major Professor from those submitted by the student's Examining Committee.
3. The written examination will cover major and minor areas relevant to the student's area of research specialization. The exam may include material contained in relevant undergraduate core courses, topics covered in the student's coursework, general geoscience topics, and topics from the student's specific research areas. Questions for the written exam will include topics covered in the student's coursework and specific research area and/or general Geoscience topics.
4. The examination will be given in one continuous three-hour period. The Major Professor is responsible for administering the examination.
5. Individual questions will be graded by the member of the Examining Committee who submitted them. A grade of Passed/Not Passed will be assigned to the completed examination by the Examining Committee. A grade of Passed allows the student to proceed to the oral defense.
6. If a student receives a grade of Not Passed, at the discretion of the Advisory Committee, he/she may be asked to leave the program, or may be given an opportunity for re-examination. Only one re-examination will be allowed. Failure to receive a grade of Passed on the re-examination will result in the student being asked to leave the program. At the discretion of the Advisory Committee, the re-examination may be broad in scope, or may be focused on specific deficiencies identified in the first examination.

#### b) Oral Defense

1. A student becomes eligible for the oral defense upon receiving a grade of Passed on the written examination. The student should have made enough progress towards completion of the thesis so that he/she can provide each member of the Examining Committee with an *acceptable draft copy at least two weeks in advance* of the date of the defense.
2. The oral defense should normally be held in the same semester as, and following the written examination. The Examining Committee will guard against extended delay between the written and oral exams. Should excessive delay occur, the Examining Committee may require the student to retake the written examination.

3. The oral defense must be scheduled so as to occur no later than three (3) weeks prior to the final date for filing of the approved thesis with the Graduate School. The defense will focus on the candidate's research, with particular attention given to the defense of material in the thesis. Members of the Examining Committee may require that changes be made to the thesis before giving final approval.
  4. The student is responsible for notifying the Dean of the University Graduate School of the date and place of the examination *at least two (2) weeks in advance*, in accordance with regulations of the University Graduate School (Graduate School Form 8). The student's Major Professor (Chairperson of the Advisory Committee) is not eligible to serve as Chairperson of the oral examination.
- c) Results: Immediately following the oral examination, the candidate's Examining Committee will evaluate his/her total performance record and make one of the following recommendations:
1. Failure, no degree awarded.
  2. Conditional pass: final decision on award of degree held in abeyance until additional work and/or corrections are satisfactorily completed.
  3. Passed, M.S. degree to be awarded, but individual is not recommended for Ph.D. program.
  4. Passed, M.S. degree to be awarded, with individual qualified for Ph.D. program.

## VI. The Doctor of Philosophy Program

### A. General

1. The Ph.D. program has two phases: *pre-candidacy* and *candidacy*.

*Pre-candidacy* is a formal plan of study (see section B1), including course work designed to strengthen and expand the student's grasp of fundamental knowledge, particularly in subject areas that are directly relevant to their dissertation subject. Pre candidacy is also the time when preliminary data is gathered for the development of a dissertation research plan. By no later than the third semester, a ***Qualifying Exam*** (section B2) will be administered by the student's Advisory Committee. The Qualifying Exam will cover general competency in the field (coursework) with an emphasis on knowledge that relates to initial research area. Students who fail the qualifying exam may petition for a re-examination, which must occur within one semester and is subject to the discretion of the Advisory Committee. Failure of the qualifying exam can result in dismissal from the program or redesignation to the MS tract if the committee feels it is warranted. A second failure of the Qualifying Exam results in dismissal from the program. Students who have not completed the Qualifying Exam by the end of their third semester must petition the

Graduate Committee in order to continue in the program. Within three years of admission to the PhD program students must apply to move on to candidacy and take their **Preliminary Examination** (section B3). The Preliminary Examination consists of a written research proposal that should highlight the research needed to move their field forward and a how this need will be met by the thesis research. The Advisory Committee will evaluate the research proposal and administer a mandatory oral and written examination aimed at assessing the student's ability to conduct and understand their proposed research.

Candidacy. Candidacy is the period of active research and independent study guided by the thesis proposal, the primary advisor and the Advisory Committee. Completion of the **PhD Thesis** (section B4) and passing of the **Final Examination** (section B5) is required before granting of the PhD degree. The Final Examination is an oral presentation, and defense of, the research in the PhD. dissertation.

2. A student shall establish candidacy within three (3) years of admission to the Ph.D. program. The maximum allowable time for completion of requirements for the Ph.D. degree is six (6) years from admission to the graduate program. Students who do not finish within the specified time must file a written request with the Graduate Committee to be allowed to continue in the graduate program.
3. At least 90 credit hours are required. At least one-third of the total credit hours used to satisfy degree requirements must be earned while registered for doctoral study in continuous residence on the Purdue campus where the degree is to be granted. A master's degree or professional doctoral from any accredited institution may be considered to contribute up to 30 credit hours toward satisfying this requirement at the discretion of the student's graduate program.
4. Maximum credit loads (academic course credit and research credit) are established by the University Graduate School. A normal, full-time load for a graduate student is 9 to 18 credit hours per semester (9 credits during the summer). Students holding research assistantships must register for research credit each semester.
5. A student pursuing a doctoral program is expected to maintain a minimum cumulative GPA of 3.0/4.0. Failure to do so will result in the student being identified as "LOW" in academic standing by the University Graduate School. Students so identified will not be awarded a degree. Further, a student remaining in "LOW" academic standing for three (3) consecutive semesters will be asked to leave the program.
6. All doctoral students are required to register for two (2) semesters of EAS 691 and write a brief summary of at least seven (7) seminars attended per semester. They must also present a departmental seminar in the final year of their Ph.D. program. The oral defense listed in #7 does not fulfill this requirement.
7. It is required that each doctoral student present a seminar on their research to the faculty, graduate students, and other interested individuals. This seminar is usually presented at the time of completion of the dissertation research and during the final oral exam.

8. Research *in absentia* is allowed after establishment of candidacy, subject to approval by the Advisory Committee.

## B. Specific Requirements

1. *Plan of Study*: Completion of an approved plan of study is required.

- a) An appropriate plan of study will be drawn up by mutual agreement between the student, the Major Professor, and the members of the student's Advisory Committee.
- b) The minimum number of course credits for the Ph.D. degree (excluding thesis research credits, EAS 699), is 18 beyond the M.S. degree or M.S. degree requirement. Should you not have a Master's degree, the minimum number of course credits for the Ph.D. degree is 42. The courses should generally be 500 level or above, but a maximum of six (6) credits at the 300-400 level are allowed. Of the 18 credit minimum, a maximum of six (6) credits of independent study are allowable. At least six (6) credits are to be from outside of the student's major area of study. Students must take a minimum of nine (9) credits in the EAS department.
- c) The plan will reflect that a thesis will be prepared and will indicate a subject area and/or working title.
- d) The plan will reflect a primary area of course work designed to support the proposed research, and will also indicate related area(s) of course work designed to broaden the student's background in selected subjects.
- e) The plan must be prepared by the student and submitted for approval prior to the end of the fourth semester in residence. The approval procedure will be as prescribed by the University Graduate School. Access to the electronic Plan of Study Generator (POSG) is via SSINFO.
- f) To complete an approved plan of study a candidate must complete each course to be used as fulfilling credit requirements with a letter grade of B or better, and have an overall GPA of 3.0/4.0 or better.

2. *Qualifying Examination*

- a) A student becomes eligible to take the qualifying exam upon :
  1. meeting of the thesis committee and filing of the plan of study.
- b) The Qualifying Exam is administered as either a written or oral examination of format determined by the thesis committee and will cover general competency in the field (with emphasis on their coursework taken) related initial research area. The student will receive individual exam questions from the faculty committee and the overall exam may be spread out over many days. The major faculty advisor will poll the individual committee members

as to whether the student has sufficient knowledge/competency of the subjects tested. Students will also meet with the committee members to review their answers. Specific guidelines for the examination are as follows:

1. The student will be advised of the format and length of the examination, as established by the Advisory Committee, at least one (1) month in advance of the examination date. The written examination should be completed within a two-week period.
2. The Qualifying Exam will consist of a maximum of four examinations of a maximum of one to two hours each.
3. Individual questions will be graded by the members of the Examining Committee who submitted them. A grade of Passed/Not Passed will be assigned to the complete examination by the Examining Committee.
4. The examination may be taken only once in a semester. Students who fail the qualifying exam may petition for a re-examination, which must occur within one semester and is subject to the discretion of the Advisory Committee. Failure of the qualifying exam can result in dismissal from the program or redesignation to the MS tract if the committee feels it is warranted. A second failure of the Qualifying Exam results in dismissal from the program.

### 3. *Preliminary Examinations:*

- a) A student becomes eligible to take the preliminary examination after:
  1. completion of most of the formal course work, as outlined on the approved plan of study, to the satisfaction of the Advisory Committee.
- b) The Examining Committee normally will be the student's Advisory Committee. The Department Head may name an additional member to the student's Examining Committee. The student is responsible for notifying the Dean of the University Graduate School of the date and place of the examination *at least two (2) weeks in advance*, in accordance with regulations of the University Graduate School (Graduate School Form 8). The student's Major Professor (Chairperson of the Advisory Committee) is not eligible to serve as Chairperson of the oral examination.
- c) Written Examination Phase: Students must prepare a research prospectus outlining in detail to his/her Examining Committee a proposed doctoral research topic. In addition, an Examining Committee member(s) may choose to administer a separate written examination, of a format determined by the member. Specific guidelines are as follows:
  - 1) The student will be advised of the format and length of the written examination, as established and coordinated by the Examining Committee members, at least one (1) month in advance of the

examination date. The written examination phase should be completed within a two-week period.

- 2) Individual questions will be graded by the members of the Examining Committee who submitted them.
  - 3) A grade of Passed/Not Passed will be assigned to the complete examination by the Examining Committee.
  - 4) The written examination may be taken only once in a semester. If a student does not pass, one full semester must elapse before re-examination. A second failure will normally result in a student being asked to discontinue the doctoral program. A student who has failed twice may, however, seek special permission from the University Graduate Council for a third examination.
- d) Oral Examination Phase: Students must orally defend their research prospectus. The oral Preliminary Examination will include a student presentation that is based on the research prospectus. All faculty, students, and interested observers may attend this portion of the examination. The maximum length for the oral Preliminary Examination is three (3) hours.
- 1) A student becomes eligible for the oral examination upon successful completion of the written phase.
  - 2) The oral examination should be completed within three (3) months of the completion of the written examination.
  - 3) The student will provide each member of the Examining Committee with a written copy of the research prospectus *at least one (1) month* prior to the date of the oral examination.
- e) Results: Immediately following the oral presentation and defense of the research prospectus, the student's Examining Committee will evaluate his/her total performance and make one of the following recommendations:
1. discontinuation of the graduate program,
  2. continued preparatory study, with additional examination at a future date, or
  3. admission to candidacy.
- f) After admission to candidacy, the candidate must *devote at least two (2) semesters* to research before taking the final examination.
3. *Thesis*: Submission of an acceptable thesis is mandatory. It must be of literary and scholarly merit, and demonstrate the candidate's ability to conduct original research.
- a. The thesis topic will be determined by mutual agreement between the student and the Major Professor, and approved by the members of the student's Advisory Committee at the time of the preliminary examination.
  - b) The thesis format will be as follows: *[the Thesis/dissertation Office Web site can be accessed at: <http://www.purdue.edu/GradSchool/thesis.html>]*

### University Format Requirements:

Seven different format items will be reviewed by the staff in the Library Thesis Format Office: 1) paper requirement; 2) typeface and quality; 3) spacing; 4) margins; 5) page numbering; 6) title page; and 7) abstract. However, these items will no longer be reviewed prior to the request for appointment of the student's final examination committee. Instead, this review will take place at the time the student's thesis or dissertation is deposited at the library, after all changes and modifications requested by the student's Examining Committee have been made.

### Departmental Format Requirements:

The thesis shall consist of a format consistent with a journal article manuscript in one of the following journals and using the format described in the style manual for that journal:

Journal of the Atmospheric Sciences  
Journal of Geophysical Research  
Bulletin of the Geological Society of America

If there is overlap between departmental style specifications and university format requirements, the University requirements must be satisfied.

The responsibility for review of the Departmental Format requirements will be assigned to the Chair of the student's Advisory Committee. This individual will have the added responsibility of assuring that the final thesis meets the stylistic requirements adopted by the department.

- c) Copies of the approved thesis will be provided to the Department (routed through the Department Head to the Department Library), the Major Professor, and other members of the Advisory Committee, as required by the University, the Graduate School, and the Advisory Committee.
4. *Final Examination:* The final examination is an oral defense of the thesis and will be administered after the research is completed and the thesis written.
- a) The Examining Committee will normally be the Advisory Committee, but does not have to be. The student has the responsibility of notifying the Dean of the Graduate School of the date and place of the examination, and of formally requesting appointment of the Examining Committee *at least two (2) weeks in advance*, in accordance with regulations of the University Graduate School. The Department Head may name an additional member to the student's Examining Committee.
  - b) An acceptable draft copy of the thesis will be provided to each member of the Examining Committee *at least two (2) weeks in advance* of the date of the



defense. The student's Major Professor (Chairperson of the Advisory Committee) is not eligible to serve as Chairperson of the oral examination.

- c) The oral defense must be scheduled so as to occur no later than three (3) weeks prior to the final date for filing of the approved thesis with the Graduate School. The final examination will have a seminar-type format, and be no more than four (4) hours in length. The oral examination will begin with a presentation, by the candidate, of the thesis research. All faculty, students, and interested observers may attend this portion of the examination.
- d) The outcome of the final examination will be:
  - 1. a recommendation that the degree be awarded, or
  - 2. a recommendation that additional research be conducted and/or that additional writing is necessary
- e) A candidate may undertake only one final examination per semester.
- f) The Major Professor will file a report of the results of the examination with the University Graduate School before the end of the session in which the degree is expected.

## **VII. Other Instructions**

### **A. Change in Classification**

- 1. Students changing their status from M.S. to Ph.D. (without completing the M.S.) or changing status from Ph.D. to M.S., must have approval from their Advisor and the Graduate Committee.

### **B. Petitions for Exceptions to Regulations**

- 1. Applicants for admission and students in residence may petition the Graduate Committee for relief from any regulation or policy established by the EAS Department.
- 2. Petitions must be presented well in advance of deadlines, to allow adequate time for the Graduate Committee's consideration.
- 3. The Graduate Committee may waive a regulation when deemed in the best interest of the academic process.

### C. Announcement of Examinations

Final oral examinations (M.S. and Ph.D.) will be announced to the faculty of the Department of Earth and Atmospheric Sciences *at least one (1) week in advance* of the examination date. The announcement will identify the student, the Major Professor, the thesis title, and the time and place of the examination. Preparation of the announcement is the responsibility of the Graduate Secretary.

### D. Participation in Oral Examinations

Faculty other than those on the student's Examining Committee may participate in oral examinations. Such faculty members are not authorized to participate in the final decision of the Examining Committee. Interested students may attend, as observers, the oral presentation of thesis results by the candidate.

### E. Registration for "Exam" & "Degree" Only

In order to be eligible for a privileged registration of "exam only" or "degree only", all graduate students are *required to have been registered for a minimum of one (1) hour of research in the preceding session*, (this includes summer).