



Department of Earth and Environmental Sciences

GRADUATE HANDBOOK

Fall 2019



Earth and Environmental Sciences
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Dear Graduate Students:

Welcome to the new academic year in the Department of Earth and Environmental Sciences! We look forward to working with you as students and TAs/RAs/Fellows, and hope you have a truly exceptional experience while here at UK.

The purpose of this document is to provide specific information on the graduate program in the Department of Earth and Environmental Sciences. Please consider this to be a guide *only* and keep in mind that it is always being updated as the Department, Graduate School, and University rules change. It is the responsibility of each of you to consult the Graduate School Bulletin (<http://www.research.uky.edu/gs/bulletin/bullinfo.shtml>) for official rules governing the degree programs in the Department:

Further information on Department or Graduate School requirements and procedures may be obtained from your Advisor, members of the Research and Graduate Studies Committee, and, in particular, the Director of Graduate Studies (DGS).

A handwritten signature in black ink, appearing to read 'Edward Woolery', written in a cursive style.

Edward Woolery
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CONTENTS

INTRODUCTION	5
Director of Graduate Studies (DGS) and the Graduate Committee.....	5
Admission to the Program	5
FINANCIAL ISSUES	6
Assistantships and Fellowships	6
Reappointment	7
Appeals	7
Tuition	7
Insurance, Health and Recreation Fees	7
Departmental Fellowships.....	8
Research and Travel Funds	8
NON-ACADEMIC INFORMATION	9
Offices and Phones	9
Parking	9
Bookstore Discount	9
Computing Issues	9
Duplicating	10
Department Vehicle Usage	10
MASTER OF SCIENCE PROGRAM	11
Course Work	11
Thesis Advisor and Advisory Committee	11
Thesis Proposal	12
Thesis	12
Requirements for Graduation	13
Final Examination	14
Other Requirements	14
Time Limits	14
DOCTOR OF PHILOSOPHY PROGRAM	14
Course Work	14
Residency for Full-time Students	15
Residency for Part-time Students	15
Major Professor and Advisory Committee	15
Dissertation Proposal	16
Qualifying Examination	16
Dissertation	17
Requirements for Graduation	17
Final Examination	18
Other Requirements	19
Time Limits	19

APPENDICES

I. Listing of Graduate Faculty in the Geology Program	20
II. Supplementary Support for Student Research	21
III. Supplementary Support of Student Travel to Professional Meetings.....	22
IV. M.S. Checklist	23
V. Ph.D. Checklist	24

INTRODUCTION

Director of Graduate Studies and the Graduate Committee

The Graduate Program in the Department of Earth and Environmental Sciences (EES) is administered by the Director of Graduate Studies (DGS), with assistance from the Department Manager (DM) and advice from the department's regular faculty, who comprise the EES Graduate Committee (GC). The GC and DGS consider issues including admissions decisions, awarding of departmental support, and review of student progress. In addition to the regular faculty serving on the GC, a graduate student representative participates in meetings at which policy matters are on the agenda but is not present when specific individuals are being discussed.

Admission to the Program

The basic requirements for admission to the program are:

1. A bachelor's degree in geology, another natural science, or engineering. Applicants to the Ph.D. program typically will hold or will be completing a master's degree.
2. An undergraduate grade point average of at least 3.0 on a 4-point scale or the equivalent.
3. Officially reported scores from the verbal, quantitative, and analytical parts of the Graduate Record Examination (GRE). No minimum score is required.
4. Satisfactory completion of basic undergraduate course work appropriate to the student's intended area of concentration as determined by the Advisor in consultation with the area advisory committee and DGS. Students typically will have completed one year each of chemistry, physics, and calculus at the college level.
5. A student may be admitted with deficiencies in course work, provided these deficiencies are satisfied prior to completion of the graduate degree. Deficiencies will be listed as part of the student's course plan.
6. Evidence of the applicant's ability to do graduate work as indicated, in part, by the research statement and letters of reference.
7. Students who are deficient in one or more respects may be admitted provisionally or as non-degree students by GC recommendation.

8. In the case of international applicants whose native language is not English, a minimum score of 550 on the written Test of English as a Foreign Language (TOEFL), 213 on the computerized version of the TOEFL, 79 on the Internet-based version of the TOEFL, or a mean band score of 6.5 on the International English Language Testing System (IELTS) is required. The TOEFL or IELTS is not required for international students with a degree (current or pending) from a university in a country where English is the primary language (e.g., USA, Canada, UK, Ireland, South Africa, Australia, New Zealand).
9. Applicants who are currently candidates for the master's degree (here or elsewhere) must complete all requirements for the degree prior to formal admission to the doctoral program.
10. Admission to the doctoral program requires that adequate faculty, course work, equipment, and other resources are available for doctoral study in the student's stated field of interest, and that an appropriate faculty member is willing to serve as the Advisor and Major Professor.

FINANCIAL ISSUES

Assistantships and Fellowships

Teaching assistantships (TAs), research assistantships (RAs), and/or fellowships are provided for full-time degree candidates; however, self-supporting students are occasionally admitted. Offers of support are made by the DGS after consultation with the GC and approval of the Graduate School. After an initial appointment period of two semesters, further appointments are normally for a two semester period and depend on satisfactory performance of assistantship duties, maintenance of a GPA of 3.0 or above, and satisfactory progress toward the degree as determined by the candidate's advisory committee, GC, and DGS. A full assistantship (half-time appointment) is to require no more than 20 hours of work per week on average as per federal law. Research assistantships are supported by research funds granted to individual faculty members and are administered by the appropriate faculty member and the DGS. Again, federal law limits official work to no more than 20 hours per week. Any student being asked to exceed the 20 hour limit should notify the DGS. Also note, Fellowship recipients have no time-based work requirements. A faculty member should not extend an offer of an RA appointment, nor should a TA resign, in order to accept an RA offer after July 15 (for the fall semester) or November 20 (for the spring semester) without prior DGS approval. Administration of fellowships depends on the source of the fellowship, but is generally overseen by the DGS in consultation with the GC. Assuming satisfactory progress and performance of duties, departmental assistantship or fellowship support is guaranteed for a maximum of four semesters from the date of initial enrollment in the program for M.S. candidates and for a maximum of eight semesters from the date of initial enrollment in the program for Ph.D. candidates.

Reappointment

Reappointment of assistantships is based on evaluation of the performance of each student each semester on the basis of course work, performance in assistantship duties (both TAs and RAs), and progress toward a degree. The student is informed in writing of any deficiencies. The deadline for notification of non-reappointment is March 1.

For TAs, performance each semester will be assessed using a Graduate School observation form and a departmental evaluation form, which will be completed by the TA supervisor or another faculty member. Satisfactory performance each semester also includes participating in orientation activities and attending at least one continuing education activity as specified by the DGS. Examples of continuing education activities include attending teaching workshops organized by the department, the Graduate School, or the UK Center for the Enhancement of Learning and Teaching (CELT). Any activity not associated with the department or CELT must be pre-approved by the DGS.

An overall grade-point average of 3.0 in graduate courses is required for graduation. Students who have completed 12 or more credits and have less than a 3.0 average are placed on probation. Students on probation cannot receive a tuition scholarship from the Graduate School and will be dismissed from the program if they have not attained a 3.0 average after a further 9 credits of work.

Appeals

Appeals of academic or support decisions should be made in writing to the DGS or the Department Chair who will consult with the Graduate Committee. Appeals may also be made to the University Ombud.

Tuition

The Graduate School provides in-state and out-of-state tuition scholarships to TAs and holders of Graduate School Fellowships who are in good academic standing (GPA of at least 3.0 following completion of 12 hours) and out-of-state tuition fellowships for RAs. The in-state portion of tuition for RAs is commonly covered by grants. University employees who are taking classes part-time are eligible for tuition subsidies through the Employee Educational Program (for more information, see <http://www.uky.edu/hr/benefits/more-great-benefits/employee-education-program>).

Insurance, Health, and Recreation Fees

Full-time students (enrolled in 9 or more credit hours) are charged a mandatory health fee. The student is responsible for these fees. If you are a part-time student you may request a voluntary health fee and pay the charge prior to the first day of classes. This fee will allow you to use the University Health Service (UHS) at little or no cost. To use UHS

in the summer, students must pay the summer health fee or pay on a fee-for-service basis. For more information, please see <http://www.ukhealthcare.uky.edu/uhs/>

The student health fee is separate from student health insurance. All fully funded, enrolled, degree-seeking graduate assistants and fellowship recipients are provided health insurance at no charge. Call 257-3261 for more information, or go to <http://gradschool.uky.edu/health-plan>.

There is a mandatory recreation fee that gives access to campus facilities. This is separate from a non-mandatory athletics fee that allows full-time students to buy tickets for sporting events. In addition, students are responsible for paying lab fees for some courses.

Departmental Fellowships

Incoming students are eligible for a Pirtle or Boone Fellowship, which provides \$3,000 for summer salary, if they meet the following criteria:

1. a score of at least 75th percentile on one section of the general GRE, and 50% in another section;
2. a bachelor's or graduate degree from an institution in the USA or Canada

and one of the following criteria:

1. a GPA \geq 3.30 on all undergraduate course work in the USA or Canada;
2. a GPA \geq 3.60 for their last 60 semester hours of undergraduate course work in the USA or Canada;
3. a GPA \geq 3.80 in master's coursework in the USA or Canada.

The fellowship is renewable, contingent on satisfactory progress, for a second summer for M.S. students and for two additional summers for Ph.D. students. Recipients of the Pirtle or Boone Fellowship must be engaged in thesis/dissertation research or writing, and cannot hold employment outside the department during the term of the award. Students who decide to transfer to another department on campus or another university are not eligible to receive the Pirtle. If a recipient finishes all requirements for the degree before the award period is finished, the award will be prorated for the term during which research was pursued.

Research and Travel Funds

Support for research expenses and travel to professional meetings may be available through professional societies, the Graduate School, and the department. Students are encouraged to apply for research and travel funds from organizations such as the Geological Society of America, the American Association of Petroleum Geologists, and

Sigma Xi. Currently-enrolled students are eligible to apply for departmental research and travel grants from the Ferm and Brown-McFarlan funds. Detailed guidelines for each type of grant are listed in Appendices II and III.

When planning to travel, please complete the A&S Travel Form:

<https://resources.as.uky.edu/business-center-forms>. This travel form is intended to provide information to the A&S Business Center so that they can keep timely and accurate financial records. It is important to fill this form out **before** your intended travel dates, and before purchasing any travel related expenses, including conference registration, abstract fees, hotel charges and airfare.

NON-ACADEMIC INFORMATION

Offices and Phones

Offices are provided for active graduate students according to available space. The DGS and Department Chair will assign departmental office space at the beginning of each semester, in the following order of priority: (1) TAs, (2) RAs and fellows, and (3) unsupported students. Assignment of student offices in each research laboratory is at the discretion of the faculty member who supervises the laboratory. The DM will supply keys; there is a \$7 deposit per key. All keys must be returned before you leave UK. TAs and RAs assigned to offices in Slone Building are encouraged to use electronic communications, but can utilize the department front office number for specific phone needs (e.g., teaching syllabi, etc.).

Parking

Graduate students employed by the University of Kentucky as Teaching or Research Assistants are eligible for employee (E) permits. For more information on current rates for E permits or student (C, R, or K) permits, please visit the parking website at <http://www.uky.edu/pts/>. Students can go to the Parking Office located at Parking Structure #6 on the corner of Virginia and Press avenues to purchase permits, but only after they are on the payroll.

Computing Issues

All registered students are given a UK e-mail address by the computing center and are given instruction on how to access it and change the password. This is the official UK email communication address, and you are expected to use this account in all university-related communications. Please send your e-mail address to the DM and DGS. You will also receive an A&S server account; the DM sends a list of our

new students to A&S computing services to set this up. Please see the Department Manager for any problems concerning your A&S accounts.

Duplicating

Copies made for teaching your classes and a reasonable number associated with your research are not charged to you. The machine operates by using a copy code assigned to each individual. There are two copy machines in Slone; one is located in room 104B (conference room) and the other is located in the front office. Any problems that arise while you are using the machine should be reported to the Department Office.

Department Vehicle Usage

Department vehicles may be used for class field trips, research, and official departmental business. There are several rules regarding use of these vehicles:

- A new driver approval form must be on file in the department office before you will be eligible to drive these vehicles.
- You must be a U.S. citizen or a permanent resident of the USA and have a valid driver's license to be able to drive a state vehicle.
- You must be on the University payroll *currently*.
- To drive a 15-passenger vans you must receive University training and certification.
- You cannot take a vehicle out of state unless you are accompanied by an Earth and Environmental Sciences faculty member.

A calendar for reserving vehicles is kept in the front office of Slone. Keys should be picked up shortly before departure, and a trip ticket (enclosed in the key case) must be filled out completely at the end of each trip. Keys are to be returned no later than 9:00 a.m. the day following the trip, and all vehicles are to be clean and full of gas when returned.

Because of heavy demand and to ensure maximum convenience for all, all class field trips are scheduled at the beginning of each semester. If a schedule changes or if a class trip is added, a vehicle will be assigned if one is available, but there are not enough vehicles to ensure that one will be available on short notice.

Research use of vehicles must be billed to an account other than the department budget. In order to reserve a vehicle for research, you must indicate which account will be charged. Examples of accounts to be charged for research travel include faculty grants, professional society grants, and Brown-McFarlan and Ferm funds.

MASTER'S DEGREE (see also M.S. check list, Appendix IV)

Course Work

The Master of Science in Geological Sciences (Plan A) requires the completion of graduate course work and a thesis. The student must complete at least 24 credit hours of graduate course work. The normal graduate load is 9-10 credits during each of the first two semesters, and no more than 12 credits is advised. Graduate courses are those in the 500, 600, or 700 series, or in the 400G series if outside the Department of Earth and Environmental Sciences. At least 16 credits must be in EES course work, including the 3 credit hour Scientific Communication course (EES 695-001). At least 12 credits must be in the 600 or 700 series, and at least 9 of the 600- or 700-level credits must be in EES courses. At least 16 hours must be regular (non-research) courses. Full-time students who are enrolled in at least 3 hours but less than 9 hours of coursework, which is typical in the third semester of the M.S. program, should register for EES 768 (Residence Credit for the Master's Degree) to reach 9 hours total. Please note that EES 768 is not considered coursework, and therefore does not count towards the 24 required hours.

Individual Work in Geology (EES 782) will include data collection (field, laboratory, and/or library) and must **not** duplicate thesis research. A research plan must be approved by a faculty member who will direct the research and by the DGS. The faculty member who directed the research will provide a final evaluation of the project, which will be conveyed to the DGS.

Students who are in residence during a fall or spring semester and using Department facilities, but who are not taking courses, must enroll in EES 748 for 0 credits through the DGS. All other course registrations are done by the student.

The grade of D is not given to graduate students. Any I grades must be removed within one year and before the Final Examination may be scheduled.

A maximum of 9 credit hours of graduate work earned either at another institution or as a post-baccalaureate student at UK may be transferred by approval of the student's Thesis Advisor, the DGS, and the Graduate School.

Thesis Advisor and Advisory Committee

Thesis research is conducted under the guidance of a Thesis Advisor and an Advisory Committee, chaired by the Thesis Advisor and including at least two other faculty members. The duties of the Advisory Committee include evaluation of academic progress as a criterion for reappointment of an assistantship or fellowship. Typically, the Thesis Advisor is identified during the admissions process. For full-time students, the Thesis Advisor should be officially identified no later than the end of the student's first semester in residence, and the Advisory Committee should be appointed no later than the end of the

first month of the second semester in residence. For part-time students, the Thesis Advisor should be selected by the time the student has completed 9 credits of course work. The members of the committee for each student are selected in terms of appropriateness of research interests relative to the subject of the thesis and/or in terms of specific techniques. Selection of the Thesis Advisor is the responsibility of the student. Selection of the other members of the Advisory Committee is the joint responsibility of the student and the Thesis Advisor, and is subject to approval by the Graduate Committee.

A majority of the Advisory Committee (at least two members, including the Thesis Advisor) must be members of the Graduate Faculty. At least one of the committee members must be a Full Member of the Graduate Faculty. The Advisory Committee for each M.S. student will meet with the student to review progress at least once a year, and will meet specifically to approve the thesis proposal and for the Final Examination. It is the responsibility of the student to convene these meetings. The M.S. student will also meet with the DGS each semester prior to or during registration to assess the student's progress.

Thesis Proposal

All M.S. candidates are required to write a proposal outlining the research problem to be undertaken. It should include the objective(s) of the project, methods to be used, a timetable for completion of the work, and anticipated results. The proposal must be approved by the student's advisor and by the Advisory Committee. For full-time students who enter in the fall semester, the proposal should be written by February 15 of the second semester in residence (or by October 1 for students entering in the spring semester). Failure to meet this deadline represents unsatisfactory progress on the part of the candidate.

Thesis

Because at least a year is generally required between the start of work on the thesis and the final examination, thesis work should be initiated no later than the second semester of study for full-time students. Final evaluation of the thesis will be conducted by the student's Advisory Committee. The quality of the final draft is subject to approval by the student's Advisory Committee and the DGS. The M.S. thesis requires execution of standard techniques, collection of data, application of the scientific method, and documentation of conclusions; the work is done under relatively direct supervision of the Thesis Advisor. Graduate School requirements concerning the format and organization of a thesis are outlined at <http://gradschool.uky.edu/thesis-dissertation-preparation>. Students are urged to consult these instructions during the preparation of early drafts. Theses should be designed to be consistent with the format of a professional journal in the field of the research. During progress on the thesis, the student should consult regularly with the Thesis Advisor and other members of the Advisory Committee.

Requirements for Graduation

Before a Final Examination can be scheduled, the following steps must be completed:

1. File an Application for Degree with the Graduate School within 30 days after the beginning of the semester in which the student intends to graduate (15 days in the summer session). See <http://www.uky.edu/Registrar/AcademicCalendar.htm> for specific deadlines.
2. Minimum one (1) professional presentation based on thesis research.
3. Provide a review copy of the thesis to each member of the Advisory Committee at least 6 weeks before the anticipated Final Examination date.
4. Student files the “Master’s/Specialist Degree Candidate” form, which is submitted to the Graduate School at least 2 weeks before the exam date. This application is subject to DGS review and approval.
5. The Final Examination may then be scheduled on the “Request for Final Master’s Degree Examination” form, which is submitted to the Graduate School at least 2 weeks before the exam date. This application is subject to DGS review and approval.
6. The final examination must take place no later than eight days prior to the last day of classes of the semester in which the student expects to graduate. Final examinations may not be scheduled during the period between semesters or between the end of the eight-week summer session and the beginning of the fall semester. Consult the Academic Calendar for deadlines for the scheduling of final examinations: <http://www.uky.edu/Registrar/AcademicCalendar.htm>.
7. An examination draft of the thesis must be available for inspection in the Department for at least 1 week prior to the Final Examination.
8. A final revision of the thesis is prepared to reflect changes specified by the Advisory Committee as a result of the Final Examination. The final copies must be signed by the Thesis Advisor and the DGS and submitted to the Graduate School within 60 days of the Final Examination and by the end of the semester in which the student intends to graduate. The ETD approval form must be signed by the student, the Thesis Advisor, and the DGS and submitted to the Graduate School. Prior to final submission you must have your thesis reviewed by the Graduate School for a first format check. This process takes about 48 hours but may take longer during peak periods, especially during the end of the semester. Please plan accordingly.

See <http://gradschool.uky.edu/degree-forms> for Graduate School degree forms.

Final Examination

The Final Examination is a defense of the thesis and is open to the public. Passing or failing the Final Examination is by majority opinion of the Advisory Committee. A student who fails the Final Examination may retake it, but a third examination is not permitted. The format is a brief presentation of the results of the thesis research followed by questions from the audience in open session. The open public session is followed by a closed session for questions from the Advisory Committee.

Other Requirements

Each student is required to make one public presentation on the thesis (at a professional meeting or within the department), independent of the Final Examination.

Time Limits

For students who enrolled in the program in Fall 2005 or later, the degree requirements must be completed in 6 years, but students will still have the opportunity to request extensions up to an additional four years for a total of 10 years. All requests must be initiated by the Director of Graduate Studies.

DOCTOR OF PHILOSOPHY (see also Ph.D. check list, Appendix V)

The requirements for the Ph.D. degree are discussed in detail in the Graduate School Bulletin (<http://gradschool.uky.edu/graduate-school-bulletin>). These and more specific departmental requirements are outlined below. Graduate School forms are available at <http://gradschool.uky.edu/studentforms>.

Course Work

Doctoral candidates complete at least 42 hours of graduate course work, including that taken for a master's degree (which counts for 18 hours). Ph.D. students must take the 3 credit hour Scientific Communications course (EES 695-001), unless they have already completed these requirements as a student in the M.S. program. The normal full-time load is 3 courses (usually 9-10 credits) each semester, and no more than 12 credits per semester should be taken.

Individual Work in Geology (EES 782) and Research in Geological Sciences (EES 790) will include data collection (field, laboratory, and/or library) and must not duplicate dissertation research. EES 790 should be used as a placeholder only, and does not count towards total hours of coursework. A research plan must be approved by a faculty member who will direct the research and by the DGS. The faculty member who directed the research will provide a final evaluation of the project the evaluation will be conveyed to the DGS.

The grade of “D” is not given to graduate students. Any “I” grades must be removed within one year and before the Qualifying Examination may be scheduled.

Residency for Full-time Students

At least 3 years of full-time graduate work are required for the Ph.D. degree:

- 1) A student may request that the DGS petition the Graduate School to have a master's degree from an accredited university satisfy 1 year of the residency requirement.
- 2) For full-time students, the second year, which immediately precedes the Qualifying Examination, is spent taking coursework (9 hours per semester, Graduate School Model I).
- 3) Post-qualifying exam: once the qualifying examination has been completed successfully, students who enrolled in the program in Fall 2005 or later are required to enroll continuously in EES 767 (every fall and spring semester) until they have completed and defended the dissertation (a minimum of 2 semesters). The Qualifying Examination (written and oral) may be taken at any time during the first semester of enrollment in this course. However, the request to schedule the examination must be submitted and approved within the first 6 weeks of the semester. Two hours of 767 constitutes full-time enrollment.

Residency for Part-time Students

Model II. Part-time students may take at least 6 credit hours per semester during three consecutive semesters prior to the Qualifying Examination (residence model II of the Graduate School Bulletin). (Note that the combined first and second summer sessions can be considered as a single semester.)

or

Model III. Under residence model III of the Graduate School Bulletin, a part-time student may accumulate 24 graduate credits (exclusive of short courses, and no more than 9 credits in summer sessions) during three consecutive academic or calendar years.

Relative to post-qualifying exam enrollment, the same rules apply to part-time students as stated above for full-time students.

Major Professor and Advisory Committee

The student's Advisory Committee is chaired by the Major Professor. The role of the Advisory Committee is to assure the preparation of the student for the research, to supervise and provide advice on the research, and to evaluate the dissertation. The Advisory Committee will meet with the student to review progress at least once a year, and will meet specifically for the following occasions: to approve the preliminary dissertation proposal; for the Qualifying Examination; and for the dissertation defense. The student also meets each semester with the DGS to evaluate progress.

Selection of the Major Professor is the responsibility of the student and should be confirmed during the admissions process. Other members of the Advisory Committee should be appointed as soon as the direction of the student's proposed research is established, and no later than the end of the student's second semester in residence. The members of the Advisory Committee for each student are selected in terms of appropriateness of research interests relative to the subject of the dissertation and/or in terms of specific techniques. Selection of the other members of the Advisory Committee is the joint responsibility of the student and the Major Professor, and is subject to approval by the Graduate Committee. The composition of the Advisory Committee is recommended by the DGS to the Graduate School on the "Doctoral Advisory Committee" form for final approval. Any subsequent changes in the composition of the Advisory Committee are subject to the same approval.

The core of the Advisory Committee consists of four members, including the Major Professor, all of whom must be members of the Graduate Faculty of the University. The composition of the doctoral committee must consist of at least 50% EES core faculty (e.g., two EES faculty if the committee totals four members). At least three members of the core must be Full Members of the Graduate Faculty. If the Major Professor is not a Full Member, a co-chair who is a Full Member must be appointed. At least one member of the core must be from outside the Department. Additional members of the Advisory Committee other than the core members may also be appointed. Individuals who are not members of the University faculty may be appointed as Auxiliary (non-voting) Members, and they may serve as core members if they are approved as Associate Members of the Graduate Faculty by the Graduate School. Regular (Associate or Full) members of the Graduate Faculty must comprise a majority of the Advisory Committee. All decisions of the Advisory Committee are by majority vote of its Regular Graduate Faculty members.

Dissertation Proposal

In order to advance to candidacy, the doctoral student will: (a) produce a full "submission-ready" written proposal (~15 pages) of the original research to be pursued at UK, such as might be produced for an open Request for Proposal (e.g., NSF, ACS, USGS, NOAA, or similar, but not student-specific RFPs such as NSF-GRFP, GSA student awards, or similar); and (b) pass an oral

and written examination administered by the committee. It is not required that the dissertation proposal be submitted to a granting agency, but it is encouraged.

The proposal must be approved by the student's advisor and by the Advisory Committee in advance of the Qualifying Examination.

Qualifying Examination

The Qualifying Examination is taken after at least 36 graduate credits have been completed, including 18 hours for a master's degree. The student initiates the request for the Qualifying Examination on-line. For students who entered the program in Fall 2005 or later, the Qualifying Examination must be taken within 5 years of enrollment in the program. Extensions of time are possible but not automatic. The examination is intended to verify that the student has sufficient understanding and competence to pursue research for the dissertation. It is administered by the Advisory Committee and consists of two parts:

Written: written exams are required by the Graduate School, and will precede the oral exam (generally the week prior). The core committee members are required to administer a written exam, but is optional for the outside member. The format for the written exam will be determined by each committee member in consultation with the Advisor. The format details should be provided to the student during the scheduling process.

Oral: following completion of all parts of the written exam, the oral exam is held. This begins with a presentation by the student of an outline of the proposed dissertation research, followed by questions from the Advisory Committee in closed session. The topics of questioning may extend into supporting fields related to the topic of the dissertation.

The request for the examination must be received by the DGS at least 2 weeks before the examination so that the "Recommendation for Qualifying Examination" form may be submitted to the Graduate School.

All parts of an examination shall be completed before a pass/fail decision is made. If the student fails the first administration of the examination, the examination may be retaken at least 4 months but no more than 1 year after the first examination. A third examination is not allowed.

Dissertation

The dissertation represents the culmination of a major research project. Throughout the course of research and writing, the student should consult regularly with the Major Professor and other members of the Advisory Committee. Final evaluation of the dissertation will be by the Advisory Committee. The quality of the final draft is subject to approval by the Advisory Committee and DGS. A Ph.D. dissertation represents innovative

original work, new approaches, and a significant new contribution to the body of knowledge; the work is done relatively independently, but under supervision. The body of research will result in three (3) peer-reviewed scientific journal publications recognized by the community of specialization. Two (2) publications from the dissertation must be published (or accepted) and the third submission-ready prior to scheduling a dissertation defense. The format for the final copy of the dissertation must be in accordance with guidelines of the Graduate School and with the standard editorial practices of a professional journal that is appropriate to the topic of the research.

Requirements for Graduation

Before a Final Examination can be scheduled, the following steps must be completed:

1. File an Application for Degree with the Graduate School within 30 days after the beginning of the semester in which the student intends to graduate (15 days in the summer session).
2. First-author two (2) published (or accepted) peer-reviewed scientific journal articles and have one (1) submission-ready peer-review scientific journal article associated with the dissertation research. The publications should be in a quality journal(s) appropriate to the topic of research. Field-trip guides (including those peer-reviewed) and similar publications are not appropriate.
3. Minimum two (2) professional presentations based on original dissertation research.
4. Student files the "Notification of the Intent to Schedule a Final Doctoral Examination" on-line at least 8 weeks before the anticipated Final Examination date. This application is subject to DGS review and approval.
5. Provide a review copy of the dissertation to each member of the Advisory Committee, at least 6 weeks before the anticipated Final Examination date.
6. Student files the "Request for Final Doctoral Examination" form, which is submitted to the Graduate School at least 2 weeks before the exam date. This application is subject to DGS review and approval. For graduation in any given semester, the examination must be completed prior to posted deadlines.
7. A copy of the dissertation must be provided to the Outside Examiner for the Final Examination as soon as she or he is appointed by the Graduate School.
8. An examination draft of the dissertation must be available for inspection in the Department for at least 1 week prior to the Final Examination.
9. A final revision of the dissertation is prepared to reflect changes specified by the Advisory Committee as a result of the Final Examination. The final copies must

be signed by the Major Professor (and co-chair, if one exists) and the DGS, and then submitted to the Graduate School by the end of the semester in which the student intends to graduate and no later than 60 days after the Final Examination. The ETD approval form must be signed by the student, the Major Professor, and the DGS and submitted to the Graduate School.

The Graduate School requirements concerning the format and organization of a dissertation are provided in “Instructions for the Preparation of Theses and Dissertations” (<http://gradschool.uky.edu/thesis-dissertation-preparation>). Students are urged to consult the Graduate School regarding these requirements during the preparation of early drafts. Dissertations should be designed to be consistent with the format of a professional journal in the field of the research.

Final Examination

The Final Examination is primarily a defense of the dissertation and is open to the public. It is conducted by the Advisory Committee expanded to include an Outside Examiner appointed by the Graduate School and is chaired by the Major Professor. The format of the examination is a brief presentation of the results of the dissertation research followed by questions from the audience in open session. The open public session is followed by a closed session for questions from the Advisory Committee. Passing or failing the Final Examination is by majority opinion of the Graduate Faculty members on the Advisory Committee. A student who fails the Final Examination may retake it, but a third examination is not allowed.

Publication and Professional Presentation Requirements

- 1) Each student is required average of one annual presentation, beginning in year two of the PhD sequence, in order to be in “good standing” for funding. A minimum of two oral presentations must be completed in order to defend. The annual presentations are preferably made at a professional conference, but a departmental seminar can satisfy one presentation requirement. Satisfactory progress will be assessed at the yearly committee meeting.
- 2) Two first-author dissertation chapters must be in published (or accepted) at a peer-reviewed technical/science education journal or edited volume in order for the PhD candidate to defend. It is the expectation that a third chapter will be close to submission-ready by the defense date, to be enforced by the committee and approved by the DGS.

Time Limits

1. Students who first enrolled in the doctoral program in Fall 2005 or later are required to take the qualifying examination within 5 years of entry into the program.

Extensions of up to an additional 3 years may be requested. Extensions up to 12 months may be approved by the Dean of the Graduate School upon receipt of a request from the DGS. Requests for extensions longer than 12 months must be considered by Graduate Council and require the recommendation of the DGS, the Major Professor, and a majority vote of Graduate Faculty in the program. If the qualifying examination has not been passed at the end of 5 years, or at the end of all approved time extensions, the student is dismissed from the program.

2. Degree requirements must be completed within 5 years following the semester or summer session in which the Qualifying Examination is completed. The Graduate Council will consider a request for an extension of up to 5 years upon recommendation of the DGS after the candidate has successfully retaken the Qualifying Examination. Failure to pass the re-examination indicates the termination of degree candidacy.

Appendix I. LISTING OF GRADUATE FACULTY IN THE GEOLOGY PROGRAM

Full Membership

Regular Faculty:

Andrea Erhardt
Frank Ettensohn
Alan Fryar
William Haneberg
Jim Hower
Liang Liang*
Michael McGlue
David Moecher
Jonathan Phillips*
Dhananjay Ravat
Jon Stallins*
J. Ryan Thigpen
Alice Turkington*
Edward W. Woolery
Kevin Yeager

Adjunct Faculty:

Stephen Greb
Zhenming Wang

Associate Membership

Regular Faculty:

Rebecca Freeman
Keely O'Farrell

Adjunct Faculty:

J. Richard Bowersox
Cortland Eble
John Hickman
Thomas Parris
Junfeng Zhu

*Geography faculty participating in joint Earth Surface Systems graduate program

Appendix II. SUPPLEMENTARY SUPPORT FOR STUDENT RESEARCH

FERM FUND

The Ferm Fund is supported by contributions from alumni of the Department and is intended to support student research. Funds are available to cover some of the expenses of senior research projects or a graduate student's research for a thesis or dissertation.

The following types of expenses generally are considered for support:

1. Field transportation using a personal or departmental vehicle, based on gasoline costs for total mileage, as well as subsistence costs of field work (all expenses must supported by dated receipts).
2. Research supplies, software, equipment, or analyses not available from departmental or UK campus facilities.
3. Travel expenses to conduct analyses at off-campus labs.

PREPARING THE APPLICATION:

1. Funds are limited, and in order to make appropriate support available to all eligible students, students who receive research support from the Brown-McFarlan Fund or Ferm Fund are asked to be as fiscally conservative as possible and to seek other funds before using these departmental funds. Prior to applying for departmental support, graduate students should apply to professional organizations that support graduate student research, including, for example, Sigma Xi, GSA, AAPG, AGU, and SEPM. In addition, post-qualifying doctoral students conducting research at sites distant from campus should ask the Director of Graduate Studies about being nominated for a Graduate School Dissertation Enhancement Award. A statement indicating the amount requested from non-departmental sources is required on the research grant application.
2. Students who previously have received research funds from the Brown-McFarlan Fund and/or Ferm Fund must include a listing of the dates of previous awards and amounts of each.
3. The application must include a detailed and specific budget. The budget should be planned carefully, and items must be concisely and fully justified. Items not adequately justified may not be granted. Expenditures will be approved within the context of the budget.
4. The signature of the faculty director of the research is required on the completed application.

CONDITIONS:

Applications may be submitted for consideration throughout the semester. The applications will be processed, and notification of funding will follow in approximately three weeks.

The maximum support level is \$300 for senior research, \$600 for M.S. thesis research, and \$1000 for Ph.D. dissertation research. Only one research award will be made to an individual student per academic year. An undergraduate student may receive only one award, a master's student may receive a total of two awards, and a doctoral student may receive a total of three awards.

A research award is made for a specific proposed budget, and the funds are restricted to uses justified in the budget. Upon approval, a check for the total amount of the award will be paid to the student.

Appendix III. SUPPLEMENTARY SUPPORT OF INDIVIDUAL STUDENT TRAVEL TO PARTICIPATE IN PROFESSIONAL MEETINGS

BROWN-McFARLAN FUND

Funds contributed by alumni provide the Brown-McFarlan Fund in the Department of Earth and Environmental Sciences. One of the purposes of these funds is to encourage students to present papers or posters at professional meetings leading to peer-reviewed publications, or to participate in leadership of professional field trips. Individual students who are actively participating (presenting a paper or poster at regional, national, or international meetings, or leading/co-leading a field trip) may apply for support of travel and meeting expenses.

1. Funds are limited, and in order to make appropriate support available to all eligible students, students who receive support from the Brown-McFarlan Fund are asked to be as fiscally conservative as possible and to seek other funds before using these departmental funds. The Brown-McFarlan Fund supports attendance at meetings to present the results of the student's original research on any geoscience topic.
2. Graduate students should first apply to the UK Graduate School for support, and a statement indicating the amount requested from the Graduate School is required in the Departmental application. In addition, students should apply for any travel funds made available through the professional organization that is hosting the meeting. In addition to travel funds, many organizations have jobs for student volunteers, who are compensated by reduced meeting fees. These additional potential sources of funding must be reported on the Departmental application.
3. Brown-McFarlan funding is intended to augment other sources of funding and will cover the balance of documented expenses that are not covered by the other sources. In other words, the objective is that a student will have all reasonable expenses covered. The department funds, however, are limited to a maximum of \$600 for regional conference or professional field trip, \$800 for a North American conference and \$1,000 for an international conference (and to distant and expensive U.S./North American destinations like Hawaii and Alaska) per student while actively engaged in the department. More than one conference funding is possible for presenting papers on sufficiently different topics with the likelihood of leading to separate peer-reviewed publications.
4. To conserve available funds, students are asked to make every effort to find the best rates for housing. Transportation may be either by ground or by air, whichever is least expensive and reasonable within the time frame. If more than one student is attending the same meeting, ride- and room sharing are encouraged. Registration, as well as reasonable meal costs (\$15-25/day), will be allowed. All anticipated costs must be reported in the budget on the application form.
5. The application must include a copy of the abstract for the presentation, as well as an acceptance notice; or the application must include an indication of leadership of a field trip (guidebook cover page, title page of article, etc.). Multiple student co-authors of a single abstract may receive only partial funding.
6. An individual student may receive support for more than one meeting per year depending on the funding availability, but only if the research being presented is clearly new.
7. Applications must be submitted at least three weeks prior to the meeting, and funding decisions will be made quickly.

A travel award is made for a specific proposed budget, and the funds are restricted to uses justified in the budget. Upon approval, a check for the total amount of the award will be paid to the student.

Appendix IV. CHECKLIST FOR THE MASTER OF SCIENCE DEGREE

Student _____ Thesis Advisor _____

- ___ 1. Admission conditions fulfilled and/or deficiencies made up.
- ___ 2. Thesis advisor (shown above) selected by end of first semester.
- ___ 3. Thesis topic and written proposal (first month, second semester for full-time students).
- ___ 4. Advisory committee* (selected by first month, second semester).
- ___ 5. Advisory committee meeting (at least once a year).
- ___ 6. Twenty-four credits of graduate course work completed.
- ___ 7. Twelve credits of 600-700 level courses completed (including 9 credits in EES courses).
- ___ 8. Sixteen credits of regular courses completed (excluding research courses).
- ___ 9. Sixteen credits of geology courses completed (including the 3 credit hour EES 695 Scientific Communications).
- ___ 10. Overall GPA of 3.0 or higher in graduate course work.
- ___ 11. Public presentation requirement satisfied.
- ___ 12. Application for Degree filed with Graduate School (by end of first month of last semester).
- ___ 13. Draft of thesis given to Advisory Committee members.
- ___ 14. Request to schedule Final Examination filed (at least two weeks before exam).
- ___ 15. Copy of thesis placed in Department one week before Final Examination.
- ___ 16. Final Examination passed (at least eight days before the end of classes for the term).
- ___ 17. Thesis accepted by Graduate School (within 60 days of Final Examination).

Advisory Committee _____

Thesis topic _____

*At least one member must be a Full Member of the Geology Graduate Faculty; one other must be an Associate Member.

Appendix V. CHECKLIST FOR THE DOCTOR OF PHILOSOPHY DEGREE

Student _____ Major Professor _____

- ___ 1. Admission conditions fulfilled and/or deficiencies made up.
- ___ 2. First year of residency completed or credited with master's degree.
- ___ 3. Major professor shown above selected (beginning of first semester).
- ___ 4. Second year of residency (before Qualifying Examination) completed.
- ___ 5. Overall average of 3.0 or higher in graduate coursework attained.
- ___ 6. Advisory Committee (shown below)* selected and approved (by end of second semester)
- ___ 7. Thirty-six credit hours** of graduate work completed (including the 3 credit hour EES 695 Scientific Communications).
- ___ 8. Dissertation topic (shown below) selected and proposal approved by Advisory Committee.
- ___ 9. Qualifying Examination schedule requested (2 weeks before the exam).
- ___ 10. Qualifying Examination passed.
- ___ 11. Third year of residency (after Qualifying Examination) completed.
- ___ 12. Public presentation and publication requirements satisfied.
- ___ 13. Application for degree filed with Graduate School (by end of first month of last semester).
- ___ 14. Draft of dissertation given to Advisory Committee members.
- ___ 15. Notice of intent to hold final exam filed (at least eight weeks before exam).
- ___ 16. Request to schedule Final Examination filed (at least two weeks before exam).
- ___ 17. Copy of dissertation placed in department (one week before exam).
- ___ 18. Final examination passed (at least eight days before the end of classes for the term).
- ___ 19. Dissertation accepted by Graduate School (within 60 days of final examination).

Advisory Committee _____

Dissertation Topic _____

*A majority (three members) must be **full** members of the Graduate Faculty; a majority must also be Geology Graduate Faculty members.

**The MS degree counts for 18 credit hours.