



UNIVERSITY OF KENTUCKY

Department of Earth and Environmental Sciences

GRADUATE HANDBOOK

Fall 2013



UNIVERSITY OF
KENTUCKY

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 and wish you a truly exceptional experience while here at the University of Kentucky.

The purpose of this document is to provide 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 for official rules governing the degree programs in the department: <http://www.research.uky.edu/gs/bulletin/bullinfo.shtml>

Further information on department or Graduate School requirements or procedures may be obtained within the department from your advisor, members of the Research and Graduate Studies Committee, and, in particular, the Director of Graduate Studies.

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INTRODUCTION

Director of Graduate Studies and the Graduate Committee

The Graduate Program in the Department of Earth and Environmental Sciences is administered by the Director of Graduate Studies (DGS), with assistance and advice from the regular faculty in the department, who comprise the Graduate Committee. The Graduate Committee and the DGS consider issues including admissions decisions, awarding of departmental support, and review of student progress. In addition to the faculty serving on the Graduate Committee, 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 2.75 on a 4-point scale or the equivalent.
3. Scores on the verbal, quantitative, and analytical parts of the Graduate Record Examination (GRE).
4. Satisfactory completion of basic undergraduate course work appropriate to the student's intended area of concentration as determined by faculty in the area. 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 letters of reference.
7. Students who are deficient in one or more respects may be admitted provisionally or as non-degree students by action of the Graduate Committee.
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 Major Professor.

FINANCIAL ISSUES

Assistantships

Teaching assistantships, research assistantships, and fellowships are available for full-time degree candidates. Application for such support should be made to the DGS. Offers of support are made by the DGS after consultation with the Graduate Committee. After an initial appointment period of two semesters, further appointments are normally for a period of two semesters 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 and the DGS.

Assuming satisfactory progress, teaching assistantships for M.S. candidates are guaranteed for a maximum of four semesters from the date of initial enrollment in the M.S. program. Similarly, teaching assistantships for Ph.D. students who already hold a master's degree are guaranteed for a maximum of six semesters from the date of initial enrollment in the Ph.D. program. Teaching assistantships for doctoral candidates who hold only a bachelor's degree are given for a period of eight semesters from the date of initial enrollment in the Ph.D. program. Students who hold a full TA (half-time appointment) must also be full-time graduate students, and the TA appointment is considered to require 20 hours of work per week on average.

Research assistantships are supported by research funds granted to individual faculty members and are administered by the appropriate faculty member and the DGS. 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).

Offers and administration of fellowships depend on the source of the fellowship, but are generally made by the DGS in consultation with the Graduate Committee. Students in residence who are not receiving support but who want support for a given semester should apply by the beginning of the preceding semester.

Reappointment

Reappointment of assistantships is based on evaluation of the performance of each student. Each student will be evaluated 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 enrollment in EES 570-001 (Teaching Geology) during the fall semester and attending teaching workshops organized by the department, the Graduate School, or the UK Center for the Enhancement of Teaching and Learning.

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 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/eep_overview.html).

Insurance, Health, and Recreation Fees

Full-time students (enrolled in 9 or more credit hours) are charged a mandatory health fee. In most cases 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://www.research.uky.edu/gs/StudentFunding/health_insurance.html.

There is a mandatory recreation fee that gives you 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.

Pirtle Fellowships and Scholarships

Students are eligible for a Pirtle 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;
2. a bachelor's or graduate degree from an institution in the USA

and one of the following criteria:

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

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. Incoming students will receive priority for consideration of awards. If the total number of fellowships awarded and continuing for any specific summer is less than six, then applications from current students who have met the selection criteria since admission will be considered.

Students who do not qualify for a Pirtle Fellowship but who are receiving less than \$3,000 in summer salary can apply for a Pirtle Scholarship, which pays up to \$1,000 in summer salary. The applicant should show evidence of having applied for research grants from sources outside the department. Calls for Pirtle Scholarship applications are made during the spring term. In the event funds are insufficient to provide awards to all applicants, priority will be given to students who have worked as TAs during the preceding academic year.

Recipients of the Pirtle Fellowship or Pirtle Scholarship must be engaged in thesis/dissertation research or writing, and cannot hold employment outside the department during the term of the award. 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. The Graduate School may support travel to professional meetings to present research (see <http://www.research.uky.edu/gs/StudentFunding/supportfunding.html> for more information; priority is given to post-qualifying Ph.D. students). Currently-enrolled students are eligible to apply for departmental research and travel grants from the Brown-McFarlan and Ferm funds. Detailed guidelines for each type of grant are listed in Appendices II and III.

There are new travel procedures concerning conference registration, abstract fees, hotel charges and airfare. Please check with the front office before purchasing tickets and paying registration; the department's procurement card will be used for most travel charges except food. Keep all receipts to receive reimbursement. After returning from your trip, fill out a "Travel Voucher" for reimbursement and include all original receipts. When you travel, an absence record form is required (available in 101 Slone).

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 front office 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, which cost minimum \$31 per month for the period of August through May, and for student (C, R, or K) permits, which cost minimum \$124 per semester. Details about permits can be found at <http://www.uky.edu/Parking/>. 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.

Bookstore Discount

TAs and RAs are eligible for a 10% discount at the University bookstore. A list of names is sent to the bookstore at the beginning of each semester. See the Department Manager if the bookstore does not have your name.

Computing Issues

All registered students are given a UK e-mail address (Exchange @ UK) 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 front office and to the Director of Graduate Studies. You will also receive an A&S server account; the front office sends a list of our new students to A&S computing services to set this up. Please see 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. The copy machine is located in the conference room 104B Slone. 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 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 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 101A 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 at least 2 credits of Current Topics in Geology (EES 570-002 in the fall semester, EES 570-001 in the spring semester) and 1 credit hour of Teaching Geology EES 570-001 (if the student is working as a TA). 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.

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 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.

M.S. students who entered the program in Fall 2010 or later must fulfill an upper-level fields-of-knowledge requirement within the major. This entails taking at least one course[†] each from three of the following five fields (* proposed courses):

(1) **Geophysics:** EES 625[†] (Topics in Applied Geophysics and Engineering Geology), EES 626[†] (Gravity and Magnetic Methods), EES 670[†] (Exploration Seismology), EES 675[†] (Earthquake Seismology), and EES 676^{*†} (Paleoseismology). Other courses include: EES 550 (Fundamental Geophysics), EES 560 (Geophysical Field Methods), EES 579 (Groundwater Geophysics).

(2) **Petrology and Geochemistry:** EES 645[†] (Topics in Petrology and Geochemistry), EES 741[†] (Environmental Clay Mineralogy). Other courses include: EES 530 (Low Temperature Geochemistry).

(3) **Hydrogeology:** EES 610[†] (Topics in Hydrogeology and Surficial Processes), EES 685^{†*} (Groundwater Modeling). Other courses include: EES 585 (Hydrogeology).

(4) **Sedimentary Geology and Paleontology:** EES 703[†] (Paleoecology/Paleontology Seminar), EES 715 (Coal Geology Seminar), and EES 730 (Seminar in Tectonics and Stratigraphy). Other courses include: EES 511 (Petroleum Geology), EES 555 (Stratigraphy).

(5) **Structure and Tectonics:** EES 620[†] (Tectonics), EES 624[†] (Advanced Structural Geology), EES 652[†] (Tectonics and Stratigraphy).

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 DGS will also meet with each M.S. student 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. The Graduate School requirements concerning the format and organization of a thesis are outlined at http://www.research.uky.edu/gs/CurrentStudents/theses_prep.html. 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).
2. Provide a review copy of the thesis to each member of the Advisory Committee, at least 6 weeks before the anticipated Final Examination date.
3. Submit the departmental "Approval to Schedule M.S. Thesis Defense" form to the DGS after all members of the Advisory Committee have signed it (at least 2 weeks before the planned defense 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 submitted to the Graduate School by the DGS, at least 2

weeks before the exam date. For graduation in any given semester, the examination must be completed prior to posted deadlines (no later than 8 days before the end of classes during the term in which the student intends to graduate). A Final Examination may only be scheduled while classes are in session.

6. An examination draft of the thesis must be available for inspection in the Department for at least 1 week prior to the Final Examination.
7. 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. For electronic theses, the ETD approval form must be signed by the student, the Thesis Advisor, and the DGS and submitted to the Graduate School.

See http://www.research.uky.edu/gs/CurrentStudents/masters_forms.html for Graduate School forms.

Final Examination

The Final Examination is a defense of the thesis and is open to the public. It is an oral examination administered by the Advisory Committee, which is appointed by the Graduate School on the recommendation of the DGS. The committee is normally chaired by the Thesis Advisor. 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 *prior to Fall 2005*, all degree requirements must be completed during the 8-year period preceding the date of graduation. Extensions are possible but are not automatic. Extensions for up to 2 years may be approved by the Dean of the Graduate School. Requests for extensions longer than 2 years must be considered by Graduate Council. All requests must be initiated by the Director of Graduate Studies.

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 of the Graduate School for the Ph.D. degree are discussed in detail in the Graduate School Bulletin (<http://www.research.uky.edu/gs/CurrentStudents/bulletin.html>). These and more specific departmental requirements are outlined below. Graduate School forms are available at http://www.research.uky.edu/gs/CurrentStudents/doctoral_forms.html.

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 at least 2 credits of EES 570-002 (Current Topics in Geology), unless they have already completed this requirement 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. 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:
 - a) *For students who enrolled in the program in Fall 2005 or later:* Under the new post-qualifying residency policy, once the qualifying examination has been completed successfully, students 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 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.

b) *For students who enrolled in the program and took the qualifying exam prior to Fall 2005:* Once the Qualifying Examination has been successfully completed, the full-time student enrolls in EES 769 for 9 credit hours for two consecutive semesters (residence model I of the Graduate School Bulletin), followed if necessary by enrollment in EES 769 for zero credit until the dissertation has been completed and defended. International students and those needing student loan deferments should register for EES 749 (0 credit hours) rather than EES 769 (0 credit hours). Registration in 0-credit courses is normally done through the DGS. If the Qualifying Examination is completed within 6 weeks of the start of a semester, that semester can be counted toward the first semester of EES 769 enrollment. With approval, specified graduate course work may be taken in lieu of all or part of the residence credit (EES 769) requirement.

c) *For students who enrolled in the program prior to Fall 2005 but have not yet taken the qualifying exam:* Those Ph.D. candidates enrolled in the program prior to Fall 2005 but who have not yet taken the qualifying examination may opt to follow either the old (769) or new (767) post-qualifying residency policy. Doctoral students who opt for the old 769 policy must have maintained continuous enrollment in the program. Students who are readmitted to the program will be subject to the new 767 policy if they have not yet taken the Qualifying Examination.

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, except that students using the 769 option (both model II and model III) may enroll in EES 769 for 9 credit hours for 2 consecutive semesters **or** for 6 credit hours for 3 consecutive semesters following completion of the Qualifying Examination.

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. 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 in Geology must comprise a majority of the Advisory Committee. All decisions of the Advisory Committee are by majority vote of its Regular Graduate Faculty members.

Qualifying Examination

The Qualifying Examination is taken after at least 36 graduate credits have been completed. The student initiates the request for 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 administered by each of the core committee members, with 1 day typically allocated for each exam. The format of each exam is at the discretion of the committee member, but the level of questions will be comparable to those on a final exam in a graduate course in that same subject. At the discretion of the core members, an outside member of the committee may also administer a written exam, subject to the same guidelines.

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 by the 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 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. 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.
3. Provide a review copy of the dissertation to each member of the Advisory Committee, at least 6 weeks before the anticipated Final Examination date.

4. Submit the “Dissertation Approval Form,” signed by a majority of the Advisory Committee, to the DGS at least 2 weeks before the anticipated Final Examination date.
5. 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.
6. A copy of the dissertation must be provided to the Outside Examiner for the Final Examination as soon as he or she is appointed by the Graduate School.
7. An examination draft of the dissertation must be available for inspection in the Department for at least 1 week prior to the Final Examination.
8. 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. For electronic dissertations, 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://www.research.uky.edu/gs/CurrentStudents/theses_prep.html). 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.

Other Requirements

Each student is required to make two public presentations (either at a professional meeting or within the Department), independent of the Final Examination.

The doctoral student must be the author or co-author of a paper submitted (with approval of the Major Professor) to a refereed journal.

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 Director of Graduate Studies. Requests for extensions longer than 12 months must be considered by Graduate Council and require the recommendation of the Director of Graduate Studies, the chair of the student's doctoral advisory committee, 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:

Frank Ettensohn
Alan Fryar
David Moecher
Dhananjay Ravat
Edward Woolery
Kevin Yeager

Adjunct Faculty:

James Hower

Associate Membership

Regular Faculty:

Sean Bemis
Michael McGlue
Audrey Sawyer
Derek Sawyer

Adjunct Faculty:

John Bowersox
James Cobb
James Dinger
James Drahovzal
Cortland Eble
Stephen Greb
Kevin Henke
Thomas Parris
Thomas Robl
Zhenming Wang
Gerald Weisenfluh
Junfeng Zhu

Appendix II. SUPPLEMENTARY SUPPORT FOR STUDENT RESEARCH

BROWN-McFARLAN FUND and FERM FUND

The Brown-McFarlan Fund and the Ferm Fund are supported by contributions from alumni of the Department and are provided 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 be 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. In addition, if a balance remains in a previous award account for an on-going project, the proposal must include an accounting of the relation of the balance to the budget of the previous award and to the new proposed budget.
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, and items not in the budget will not be reimbursed.
4. The signature of the faculty director of the research is required on the completed application.

CONDITIONS:

Applications may be submitted for consideration two times each year on October 1 or March 1. For requesting summer support, the application must be submitted by March 1. 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 completion of a research project, any remaining balance will revert to the granting Fund and be available for awards to other students. An on-going project for a graduate student may carry funds forward with the justifications described in item 3 above. Completion of a degree constitutes completion of a research project, and any balance will revert to the Fund at that time.

The amount of the grant represents an encumbrance of funds. Payment is in the form of a reimbursement after the expense is incurred upon the presentation of an expense form with receipts. The expense form and receipts will be processed through the department office, and payment will be issued through UK accounts payable. Funds awarded through this program are for a specific research budget, and any un-spent balance will be returned to the fund to be made available to another student.

**Appendix III. SUPPLEMENTARY SUPPORT OF INDIVIDUAL STUDENT TRAVEL
TO PARTICIPATE IN PROFESSIONAL MEETINGS
BROWN-McFARLAN FUND and FERM FUND**

Funds contributed by alumni provide the Brown-McFarlan and Ferm Funds 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 or Ferm 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. The Ferm Fund supports attendance at meetings to report the results of the student's original research or leadership in a professional field trip.
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, which 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. The Brown-McFarlan and Ferm funds are 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 \$300 for regional conference or professional field trip, \$600 for a North American conference and \$800 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 travel is by air, the ticket purchase must go through the UK Travel office (www.uky.edu/Travel; ask Pam Stephens for procedures) and must be at economy, advanced-payment rates (more than one month in advance). If travel is by car, the funds encumbered will be based on the estimated gasoline costs for the mileage. If more than one student is driving to the same meeting, sharing the ride is expected. Lodging allowance will be based on the University-set limits for the location of the meeting; however, lower-cost housing 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.

The amount of the grant represents an encumbrance of funds. Payment is in the form of a reimbursement after the trip upon the presentation of an expense form with receipts, except that airline tickets may be billed directly when purchased, using the University Procard. The expense form and receipts will be processed through the department office, and payment will be issued through UK accounts payable. Funds awarded through this program are for a specific meeting, and any un-spent balance will be returned to the fund to be made available to another student.

A department van may be taken to a meeting or field trip if several students wish to attend the same event, if an accompanying faculty member is available to go with the van.

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 one semester of EES 570-001 [if student works as a teaching assistant] and two semesters of EES 570-002).
- ___ 10. Department fields-of-knowledge requirement satisfied.
- ___ 11. Overall GPA of 3.0 or higher in graduate course work.
- ___ 12. Public presentation requirement satisfied.
- ___ 13. Application for Degree filed with Graduate School (by end of first month of last semester).
- ___ 14. Draft of thesis given to Advisory Committee members.
- ___ 15. Thesis approval forms signed by Advisory Committee members, prior to scheduling Final Examination by Director of Graduate Studies.
- ___ 16. Request to schedule Final Examination filed (at least two weeks before exam).
- ___ 17. Copy of thesis placed in Department one week before Final Examination.
- ___ 18. Final Examination passed (at least eight days before the end of classes for the term).
- ___ 19. 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 Graduate Faculty; one other must be an Associate Member

Appendix VI. 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 one semester of Teaching Geology (if student works as a TA) and two semesters of Current Topics in Geology.
- ___ 8. Qualifying Examination schedule requested (2 weeks before the exam).
- ___ 9. Qualifying Examination passed.
- ___ 10. Dissertation topic (shown below) selected.
- ___ 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. Approval of dissertation filed (prior to scheduling final exam).
- ___ 17. Request to schedule Final Examination filed (at least two weeks before exam).
- ___ 18. Copy of dissertation placed in department (one week before exam).
- ___ 19. Final examination passed (at least eight days before the end of classes for the term).
- ___ 20. 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 EES faculty members.

**The MS degree counts for 18 credit hours.