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## **1 Introduction**

The information in this handbook will be useful to you. Read it carefully and refer to it throughout your graduate career at Florida State University.

This handbook is a supplement to the Graduate Edition of the General Bulletin. Whereas the Bulletin provides information regarding University policies and regulations, this handbook contains more specific information about the graduate program in Geological Sciences that is not covered in the Bulletin, including policies and regulations of the Department that supplements the University. (Throughout this handbook, passages in italics are excerpts from the Bulletin.) We therefore strongly urge you to fully examine those parts of the current Bulletin that are pertinent to graduate studies at Florida State University.

Students will be formally advised, in writing, of subsequent modifications to the handbook that pertain to them.

## **2 Graduate Study in Geological Sciences**

The Department of Geological Sciences offers advanced degrees at both M.S. and Ph.D. levels. The M.S. is a professional degree. It is expected that students graduating with a M.S. degree in Geological Sciences will have acquired the capability and skills to competently evaluate and pursue graduate level research and will also possess a sufficiently broad background in the science for a professional career. The program of study for the M.S. includes formal course work in several areas within Geological Sciences, and a thesis project. Although an M.S. thesis is generally less comprehensive than a Ph.D. dissertation, it is complete in the sense that it is well-grounded in the scientific style of thinking and method, contains a clear defensible hypothesis, and involves a rigorous method of analysis. Successful completion of the M.S. program involves a significant commitment of time and energy, and a level of understanding, that goes well beyond the expectations of the baccalaureate degree.

The Ph.D. -- the doctorate of philosophy -- is the highest formal degree offered in the natural sciences. The Ph.D. in Geological Sciences is granted to students who have mastered a general body of geological knowledge, demonstrated that they are fully capable of independent, creative thinking, and that they can conceptualize, undertake, and successfully complete an original geologically pertinent research project. The Ph.D. dissertation is a substantive contribution to the field of study, and indicates that the student has achieved a high, philosophical level of understanding of the field. Pursuing a Ph.D. is a once-in-a-lifetime opportunity for a student to experience, with minimal distraction, the delightful venture of becoming fully immersed within a field of study, and to freely pursue the whims of her or his intellectual curiosity. Pursuing a Ph.D. is a full-time job (see Residence in Section 5.3, and Section 5.4).

## **3 Admission Requirements**

Basic requirements for admission to the graduate program in Geological Sciences are the same for M.S. and Ph.D. aspirants. A minimum grade point average of 3.0 (on a 4.0 scale) for all undergraduate course work is required. A minimum score of 1050 for the combined math and verbal portions of the Graduate Record Examination (GRE) is also required. This includes a minimum score of 400 for each part. In cases of exceptional circumstances, recommendation of the Admissions Committee and approval of the departmental chair may waive one of these two requirements. International students whose native languages are other

than English are also required to achieve a score of 550 or better on the Educational Testing Service's Test of English as a Foreign Language (TOEFL).

## **4 Getting Started**

### **4.1 Entrance Interview**

Each student will be asked to meet with the Graduate Advising Committee at the beginning of their first semester. This committee will discuss with the student the student's academic background and interests, make appropriate decisions regarding undergraduate deficiencies, advise the student on coursework, and assign a temporary faculty advisor.

### **4.2 Selecting a Major Professor and Starting Your Research**

If you have not upon arrival reached a tentative agreement with a specific faculty member in which that individual has agreed to serve as your major professor, you will be assigned an individual faculty member who will serve as your interim major advisor. This assignment, however, does not constitute a commitment that this individual will serve as your major professor during the remainder of your graduate career at Florida State, or that you will work with him or her on your thesis. You are free, and in fact encouraged, to explore other possibilities during your first semester, and to choose any consenting member of the graduate faculty to serve as your major professor.

An important responsibility of your interim advisor is to provide guidance regarding your Program of Study until you have selected a major professor and formed a supervisory committee (Sections 4.2 and 4.3). We urge you to discuss your goals and career plans with your interim advisor very soon after you arrive, and to begin planning a tentative Program of Study. Another equally important responsibility of your interim advisor is to involve you in an ongoing research project. This project may or may not be related to the thesis or dissertation project that you eventually pursue. What is important is that you quickly and actively begin graduate research within the department.

You are encouraged to select a major professor by the end of your first semester. Together with your major professor, you will begin the process of forming a supervisory committee and formulating a Program of Study. The Graduate Bulletin is clear on the issue of how a major professor is selected:

#### *Major and Minor Professors (M.S.)*

*At the earliest opportunity, the student should ask the chair of the major department to designate the major professor, who serves as the student's advisor and supervisor. If nine (9) or more semester hours of work are taken in any department other than the major one, these hours may be considered a minor if so desired by the student and by the major department. If a minor is requested, the chair of the major department should ask the chair of the minor department to designate a minor professor for the student's supervisory committee. Designation of major and minor professors requires the mutual consent of the student, department chair, and professors involved.*

#### *Major Professor (Ph.D.)*

*Early in the doctoral program, the student should consult with the chair of the department and with the professors under whom the student may be interested in working and*

*from whose areas of competency a dissertation topic could be selected. The departmental chair will appoint the major professor who must be a member of the graduate faculty with doctoral directive status and have special competence in the student's proposed area of concentration. The appointment must be mutually agreeable to the student, major professor, and departmental chair.*

Note that a member of the graduate faculty with co-directive status may serve as co-chair of a supervisory committee (see next section).

### **4.3 Supervisory Committees**

Students should choose a major professor and form a supervisory committee by the end of the first semester. A supervisory committee form must be filled out and approved by both the graduate program committee and the chair. This form must be approved before the Program of Studies form is completed.

The Graduate Bulletin also is clear on the issue of how a supervisory committee is formed:

#### *Supervisory Committee (M.S.)*

*A master's degree supervisory committee must be designated for all thesis students and may be designated for non-thesis students at the option of the department. The supervisory committee consists of at least three members: the major professor, the minor professor (if the student has a minor area), and one or two additional members from the major department. Additional members may be appointed if deemed desirable. All members of the committee must hold at least master's directive status.*

#### *Supervisory Committee (Ph.D.)*

*Upon the request of the major professor, the departmental chair will appoint the supervisory committee, which will be in charge of the work of the student until completion of all requirements for the degree. The supervisory committee will consist of a minimum of three members of the graduate faculty who have doctoral directive status, one of whom is a representative-at-large of the graduate faculty drawn from outside the student's department. Each year they will assess the progress of the student in writing and will make available copies of their assessment to the student, the departmental chair, and the academic dean. The Dean of Graduate Studies, the academic dean, and the chair of the major department may attend committee meetings as non-voting members. Notification of the final committee will be reported to the Dean of Graduate Studies upon appointment. Non-graduate faculty may assist a student on a supervisory committee, but cannot vote or sign the dissertation.*

The Department of Geological Sciences requires that the supervisory committee of a Ph.D. student will consist of a minimum of four members of the graduate faculty. At least three of the four members, including the major professor and co-chair, must have doctoral directive status in Geological Sciences; one member must be a college representative.

The major professor directing the student's research project is the chair of the supervisory committee. A member of the graduate faculty with co-directive status may serve as co-chair or member of the supervisory committee. This committee is involved in setting the requirements for the degree within the framework of departmental and graduate school

regulations (see Section 4.4. below), providing guidance to the student during the thesis or dissertation project, and assessing the academic performance and progress of the student (Sections 5, 7 and 8). Once the committee is appointed, any changes in its membership must involve approval, and appointment of any new members, by the departmental chair. Additional members from outside the university may in some cases be asked to serve on the supervisory committee, when their expertise will aid the research program of the student.

We urge you to meet frequently with members of your supervisory committee, in addition to the required annual meeting during which the committee assesses your academic performance and progress.

#### **4.4 Program of Study**

##### *Program of Study (M.S.)*

*As early as possible during the first semester of graduate work, students should prepare a program of courses with the help of their major professor or supervisory committee. This program must be approved by the major professor and the chair of the major department. A copy of the approved program is to be kept on file in the department.*

##### *Program of Study (Ph.D.)*

*As soon as possible after the notification of the appointment of the supervisory committee, the student, under the supervision of the major professor, should prepare for the approval of the supervisory committee a complete plan of courses to be taken. This program of study must be signed by each member of the committee and the chair of the major department. A copy of the approved program is to be kept on file in the department.*

The Program of Study at the M.S. level must include the three courses listed in Section 13, and at least one semester of Graduate Seminar (GLY 5931) each year for the first two years. Specific credit-hour requirements are described in Section 5.

The Program of Study at the Ph.D. level must include a doctoral seminar (GLY 6982) each year for the first two years. The Department currently has no other specific curriculum requirements for Ph.D. students.

The specific course requirements in a student's Program of Study are in principle selected to meet the needs and career objectives of the individual. The Program of Study at both M.S. and Ph.D. levels can be changed only through the same process by which it was first formulated, including required approvals, as described above.

#### **4.5 Colloquia and Brown Bag Series**

Two particularly important departmental activities are the colloquia series and the Brown Bag series. Colloquia involve formal presentations by invited speakers. Colloquia topics involve all fields of the geological sciences, and speakers whose affiliations are international in scope, as well as faculty from Florida State University. The brown bag series involves weekly meetings in Room 104 at noon on Wednesdays. This series is intended to provide an opportunity for students, graduate and undergraduate, and faculty members to make informal presentations of ongoing research or new research ideas, or to lead general discussions of specific topic. Students are expected to participate in these activities. Students can obtain credit for their attendance by signing up for GLY 5931 section 2.

## **5 Course Requirements**

### **5.1 Undergraduate Requirements**

A student seeking an advanced degree in the Department, whose baccalaureate degree is in the geological sciences, normally will be expected to have completed a program equivalent to that required of students receiving a Bachelor of Science degree in Geological Sciences at Florida State University. Students not meeting this equivalency, or who have degrees in disciplines other than Geological Sciences, may be expected to complete certain undergraduate courses by the end of the first year of their graduate studies. These courses will be based on a recommendation by the admissions committee, for approval by the graduate advising committee and departmental chair.

### **5.2 Master of Science Degree**

Candidates for a M.S. degree must complete at least 30 hours of advanced study (not including courses taken to satisfy undergraduate requirements). These hours must include at least one semester of Graduate Seminar (GLY 5931) each year (or partial year) for the first two years. In addition the student is required to take a one core course from each group listed in section 13. The student is not required to take core courses in the group in which their specialty falls. Three to six hours of credit may be received for thesis research (GLY 5971). The 30 hours of advanced study will not include credits earned for undergraduate courses. Exceptions to this require approval of the supervisory committee, the graduate program committee, and the departmental chair. Students normally should complete the degree requirements within two years.

### **5.3 Doctor of Philosophy Degree**

#### *Residence*

*The intent of the residency requirement is to ensure that doctoral students contribute to and benefit from the complete spectrum of educational, professional, and enrichment opportunities provided on the campus of a comprehensive university. When establishing residency the student should interact with faculty and peers, by regularly attending courses, conferences, or seminars, and utilize the library and laboratory facilities provided for graduate education.*

*After having finished thirty (30) semester hours of graduate work or being awarded the master's degree, the student must be continuously enrolled on the Florida State University campus for a minimum of twenty-four (24) graduate semester hours credit in any period of 12 consecutive months.*

The Department of Geological Sciences requires that no more than half of the hours taken in fulfillment of the residency requirement may be dissertation hours (GLY 6980).

#### *Course Work*

In addition to the residency, Ph.D.-seeking students are required to participate in a Doctoral Seminar (GLY 6982) each year (or partial year) for the first two years. Additional, required course work is determined by the student, major professor, and supervisory committee, via formulation of the Program of Study (Section 4.4).

## **5.4 Course Loads and Part-Time Students**

The normal, minimum course load is 12 semester hours. Exceptions can be made by petition to the College Dean with the approval of the graduate program and the departmental chair.

The minimum course load for half-time Teaching Assistants and Research Assistants is 9 semester hours. For each term in which a degree candidate is in residence and using University facilities, she or he must register for a minimum of 2 credit hours of Thesis (GLY 5971) or Dissertation (GLY 6980). Registration is required in the final term in which the degree is granted and shall consist of one credit hour of Thesis or Dissertation, even if the student has completed the requirements for the degree in previous semesters. Simple necessity brings many M.S. and Ph.D. students to consider outside employment while pursuing their degrees. While for some this will be unavoidable, we encourage you to actively pursue financial aid through student loan programs. Having chosen, and been deemed qualified, to pursue an advanced degree in Geological Sciences, you will get the most out of your degree program if you can concentrate on it full time. Borrowing to work on your degree full time, and pursuing employment following graduation with your degree in hand, will certainly be better for your education, and likely will prove to be better for your finances in the long run.

## **5.5 Recency**

The Graduate Dean and the Department believe that the graduate experience is a full-time commitment. While recognizing the economic realities facing some students, Graduate School rules are designed to minimize part-time pursuit of advanced degrees. Among these are the minimum load rules (section 5.4 above), the Residency Requirement for the Ph.D. candidate (section 5.3 above), and Recency Requirements:

### *Recency (M.S.)*

*The work for the master's degree must be completed within seven years from the time the student first registers for graduate credit. Any graduate work transferred from another institution must have commenced not more than seven years prior to completion of the degree for the credits to be applicable to the master's degree.*

### *Recency (Ph.D.)*

*All requirements for the doctoral degree must be completed within five calendar years from the time the student passes the preliminary examination, or the student's supervisory committee will require that a new preliminary examination be passed.*

A candidate wishing to seek an extension of one of these time limits must petition the Dean of Arts and Sciences and the Dean of Graduate Studies in writing, after receiving approval of the petition by the major professor, supervisory committee, and the departmental chair. Extensions will not be approved except for unusually extenuating circumstances.

## **5.6 Course Enrollments**

The Department adheres to the following University regulations: Unpaid course audits

are not allowed. Directed Individual Study courses (GLY 5906) may not be used to duplicate normal course offerings. Courses with small enrollments are subject to being canceled.

## **6 Research**

Research is an important component of both the M.S. and Ph.D. programs in Geological Sciences. Students entering these programs should work with the major professor (or interim advisor) to identify a research project to work on during the first semester in residence. This will be the first involvement in research for many students, and it need not be the "be-all-end-all" project that will eventually evolve into the Master's thesis or Ph.D. dissertation. Early in the program, the point is to become involved in research, see what it is like, and see what you enjoy doing. While it is certainly advisable to complete most of your course work during the early part of the program, it is essential that you also become involved in research. Your research will be the highlight of your graduate career, and it is the research training that will certainly set your graduate work apart from what you did as an undergraduate.

For the M.S. degree, the program of thesis research should be well defined, if not underway, by the beginning of the third semester. The student should consult on a regular basis with the major professor and the supervisory committee during the first year in residence regarding a suitable project and how to best pursue it. As a general rule, an M.S. thesis project is narrower in scope than a Ph.D. research project. It is important that the scope of the project be defined early so that research and writing can be accomplished on the time scale of two semesters (plus or minus a summer or two). A typical M.S. student might expect to finish class requirements, while working on thesis research, during the fall semester of the second year in residence, and then devote full time to thesis research and writing in the spring, and perhaps, summer. Despite its narrow scope, and the fact that it will often be one part of a larger research project, Master's research should be conducted in a way as to meet accepted standards for professional research in the field, and the thesis should be written so as to qualify for publication in a widely-read professional journal.

For the Ph.D. degree, dissertation research should begin in earnest during the third semester in residence. The research program should be well planned by this time as the result of extensive consultation between the student, major professor, and supervisory committee. The project should be designed so as to be completed within the context of a four-year Ph.D. program. Early on, the project is expected to evolve with time and experience, and need not be formally presented in prospectus form until the fifth semester. Ph.D. research is not an exercise. It is expected to be original, useful, timely and innovative, and the student is expected to contribute these qualities to the research. This is not to say that formal and informal advisors are not also contributors, but rather that the student is expected to demonstrate the competence and creativity to independently pursue similar research in the future. Ph.D. research should be conducted in such a way as to meet or exceed accepted standards for professional research in the field. Every student should endeavor to define new and higher standards with his or her Ph.D. work. The dissertation should be written so as to qualify for publication in a standard-setting professional journal. Ph.D. candidates are strongly encouraged to prepare their dissertation as a compilation of at least three manuscripts either submitted or ready for submission to first-tier, refereed journals, along with appendices of data and other appropriate material not generally accepted for publication. Following successful defense of the dissertation, unpublished portions should be prepared for publication at the earliest possible date. In general, only research performed while a student is a candidate

for a degree at Florida State University and under the supervision of a faculty member of this university may be used to fulfill the degree requirements. In special cases this rule may be waived by unanimous written approval of the student's supervisory committee, and approval of the departmental chair.

## **7 Guidelines for Graduate Student Testing**

The Graduate Edition of the General Bulletin is clear in its statement of University policies and recommendations regarding the purpose and scope of tests of graduate students, and the faculty involved in these tests. Items specifically relevant to testing of students are extracted and shown in italics below. These are followed by specific departmental policies, as they comply with and complement those of the University. Students are strongly urged to read the complete section in the Graduate Edition of the Bulletin regarding graduate degree requirements.

### **7.1 Master of Science Degree**

#### *Comprehensive Examination*

*A comprehensive or other type of examination, either written, oral, or both, at the option of the department, may be required for the master's degree. Testing requirements and procedures are established by the major department.*

Students must enroll for GLY 8966 during the semester in which they take the comprehensive examination.

1. At the Masters level, only a written examination will be administered.
2. The written exam will include a compulsory set of questions prepared by members of the examining committee, plus additional questions prepared by the departmental graduate faculty, of which a subset must be answered by the candidate.
3. The additional questions will be selected from a pool of questions, and will be the same for all masters candidates taking the test in a given semester.
4. The test will be administered at one specified time during each semester, and last no more than two days.
5. Each faculty member is responsible for grading only the questions that he or she prepared. Grading will be based on a standard set of written criteria, available to faculty and students (Section 7.3).
6. The overall score will be an average of the scores for all questions. It is therefore possible for a student to earn a passing score, even if the student does poorly on any one question.
7. A score of 7.0, out of a possible 10.0, will constitute a passing grade.
8. Examples of test questions will be made available to students prior to the examination.
9. The written exam will be compiled by one or two designated individuals (including the Graduate Program Coordinator), who use as a guide the record of each student's program of study with scores earned for each course at Florida State.
10. The comprehensive examination will be given by the end of the third semester after a student first registers for classes for graduate (M.S.) credit.
11. A student who fails the comprehensive examination the first time is allowed to retake the comprehensive examination by the end of the fourth semester after first registering

for classes for graduate (M.S.) credit. If a student fails the second examination, his or her degree-seeking status within the Department of Geological Sciences will be officially terminated.

### *Prospectus*

After passing the comprehensive examination, the student is required by the department to submit to the major professor, supervisory committee, and departmental chair a prospectus on a research project suitable for a master's thesis.

The Department of Geological Sciences requires an oral presentation of the research prospectus. The Department invites all members of the University (faculty and students) to attend the student's presentation of the prospectus.

1. Each prospectus will have a cover sheet that includes: a summary statement of the specific problem to be addressed by the research; the hypotheses that will be tested during the course of the work; a summary statement of the proposed experimental methods; a statement regarding why the proposed methods are a good approach for testing the hypotheses; and a statement of the significance of the work. The cover sheet should be approved and signed by all members of the supervisory committee prior to scheduling the oral presentation and defense of the prospectus.
2. The student presents the research prospectus in the form of a 20-30 minute talk, then fields any questions from the audience. Members of audience, except the supervisory committee and any other faculty members, who wish to remain, will then be excused. The student and committee will further discuss the research prospectus.
3. A final determination will be made regarding whether the prospectus will be accepted, not accepted, or accepted with change. Immediately following, the committee chair submits, in writing, the outcome of the prospectus. One copy should be given to the student and one is to be filed in the student's folder.

### *Examination in Defense of Thesis*

Three final copies of the thesis should be in the hands of the major professor and the examining committee at least 2 weeks before the date set for the oral examination. Immediately after approval by the oral examining committee, which includes the supervisory committee, the student should submit the three copies to the manuscript and final clearance adviser.

The Department of Geological Sciences invites all members of the University (faculty and students) to attend the student's oral presentation of the defense. Students must enroll for GLY 8975 during the semester in which they defend their theses.

Prior to scheduling the defense, the thesis must be approved for defense by the major professor and at least one critical reader, a member of the supervisory committee who must be identified when the committee is established. When the major professor signifies his or her approval to the departmental chair, the student will submit two copies of the thesis to the department office. Copies will be forwarded to the critical reader(s) and they will be asked to respond in writing to the departmental chair within two weeks regarding the acceptability of the thesis. (This process may require some iteration, but you are not ready to go to defense until it has been completed.) Once the major professor and critical reader(s) agree regarding

readiness of the thesis for defense, copies for each member of the examination committee should be supplied to the departmental office for distribution. The defense will be scheduled by the departmental office as soon as possible, given scheduling considerations for examiners, but not sooner than two weeks from the date when copies are supplied to the departmental office.

The defensible version of the thesis should have all figures and critical appendixes (techniques, math developments, etc.). A "defensible version" ideally is one which, if no changes are required as the result of unanticipated questions or issues raised during the defense, could be copied "as is" on the appropriate bond paper and submitted to the graduate office. As a matter of academic courtesy, an unusually lengthy thesis should be submitted to committee members sooner than the period prescribed above before the scheduled defense. A good "rule of thumb" is to add one week for each additional 50 pages beyond 100 pages.

## **7.2 Doctor of Philosophy Degree**

### *Preliminary Examination*

*The preliminary examination is designed to test scholarly competence and knowledge and to afford the examiners the basis for constructive recommendations concerning the student's subsequent formal or informal study. The form and content of this examination will be determined by the department, college, school, or committee (be it supervisory or examining) administering the degree program. Prior to the examination, the student's examining committee will determine whether the student 1) has a 3.0 average and 2) has progressed sufficiently in the study of the discipline and its research tools to begin independent research in the area of the proposed dissertation.*

*The chair of the major department, the academic dean, and the Dean of Graduate Studies may attend any session of the supervisory or examining committee as nonvoting members. A member may be appointed to the examining committee at the discretion of the academic dean or Dean of Graduate Studies or on recommendation of the major professor. Normally, the examining committee will be identical with the supervisory committee.*

*The supervisory or examining committee will report the outcome of the examination to the academic dean: passed, failed, additional work to be completed, or to be reexamined; the report following the reexamination must indicate the student either passed or failed.*

Students must enroll for GLY 8964 during the semester in which they take the preliminary examination.

1. The preliminary examination will be given by the end of the fourth semester after student first registers for classes for graduate (Ph.D.) credit.
2. The preliminary examination will consist of a written part and an oral part; all students must take both parts.
3. At the Ph.D. level, the written part of this examination will include a compulsory set of questions prepared by members of the examining committee, plus additional questions prepared by the departmental graduate faculty, of which a subset must be answered by the candidate.
4. The University Representative-at-Large will be encouraged to prepare a question.
5. The additional questions will be selected from a pool of questions, and will be the same for all PhD candidates taking the test in a given semester.
6. The written part of the test will be administered at one specified time during each

- semester, and last no more than two days.
7. Each faculty member is responsible for grading only the questions that he or she prepared. Grading will be based on a standard set of written criteria, available to faculty and students (Section 7.3).
  8. The overall score of the written part of the exam will be an average of the scores for all questions. It is therefore possible for a student to earn a passing score even if the student does poorly on any one question.
  9. Examples of test questions will be made available to students prior to the examination.
  10. The written exam will be compiled by one or two designated individuals (including the Graduate Program Coordinator), who use as a guide the record of each student's program of study with scores earned for each course at Florida State.
  11. The oral exam will be given during the same semester as the written exam.
  12. Written examination answers (with scores) and course grades will be available to examiners during the oral examination.
  13. During the oral part of the examination, questioning will begin as a follow-up to written examination questions to ascertain whether the student understands basic material in the general disciplines covered by the questions. After these areas are covered, questioning should move on to other topics.
  14. Each student will be discussed by the examining committee immediately before the oral exam is administered. This is the time when concerns over student's record, capabilities, and progress should be discussed openly, so that these concerns can be addressed as part of the questioning during the exam.
  15. The examining committee has the option of continuing an oral examination beyond the "scheduled" duration of 1-2 hours. An oral examination that is continued must be completed by the end of the semester. At the end of the oral examination, the examining committee will assign a numerical grade to the student's performance based on the same criteria used for the written part of the examination. The examining committee will average the scores for the written and oral parts of the examination then specify an outcome of "passed" or "failed". An overall score of 7.0, out of a possible 10.0, will constitute a passing grade. A student who passes may be assigned "additional work to be completed." A student who fails the preliminary examination the first time is allowed "to be reexamined".
  16. A student who is "to be reexamined" must retake the preliminary examination by the end of the fifth semester after first registering for classes for graduate (Ph.D.) credit. At the end of a reexamination, the examining committee will specify an outcome of "passed" or "failed." If a student fails the second examination, his or her Ph.D.-seeking status within the Department of Geological Sciences will be officially terminated.

#### *Prospectus (Ph.D.)*

After passing the preliminary examination, the Department of Geological Sciences requires the student to submit to the major professor, supervisory committee, and departmental chair a prospectus on a research project suitable for a doctoral dissertation. The Department also requires an oral presentation of the research prospectus. The Department invites all members of the University (faculty and students) to attend the student's presentation of the prospectus.

1. Each prospectus will have a cover sheet that includes: a summary statement of the specific problem to be addressed by the research; the hypotheses that will be tested

during the course of the work; a summary statement of the proposed experimental methods; a statement regarding why the proposed methods are a good approach for testing the hypotheses; and a statement of the significance of the work. The cover sheet should be approved and signed by all members of the supervisory committee prior to scheduling the oral presentation and defense of the prospectus.

2. The student presents the research prospectus in the form of a 20-30 minute talk, then fields any questions from the audience. Members of audience, except the supervisory committee and any other faculty members who wish to remain, will then be excused. The student and committee will further discuss the research prospectus, after which the student will be excused and the supervisory committee will determine the outcome of the prospectus, "passed" or "failed."
3. The student will be informed in writing by the committee of any concerns regarding the items in (1) above, for both passing and failing cases. A student who fails the prospectus will be asked to prepare another one.

#### *Examination in Defense of Dissertation*

*The defense of the dissertation will be oral. Responsibility for suggesting the time, designating the place, and presiding at the examination rests with the major professor. The examination must be completed at least four weeks prior to the date on which the degree is to be conferred.*

*Academic courtesy requires that a preliminary draft of the dissertation be submitted to each member of the supervisory committee at least four weeks before the date of the oral examination. The supervisory committee, the chair of the major department, and such other members of the faculty as may be appointed by the academic dean will conduct the examination. All members of the graduate faculty are invited to attend. At least two weeks prior to the date of the examination, the student or major professor will present an announcement of the dissertation title and the date and place of the examination to the Office of the Dean of Graduate Studies. The content of the abstract of the dissertation should be submitted to the supervisory committee at least one week before the date of the defense examination for approval.*

*The examining committee will certify in writing to the academic dean of the major department the results of the examination: passed, failed, or to be reexamined. The report of results following a reexamination must indicate the student either passed or failed.*

The Department of Geological Sciences invites all members of the University (faculty and students) to attend the student's oral presentation of the defense. Students must enroll for GLY 8985 during the semester in which they defend their dissertations.

Prior to scheduling the defense, the dissertation must be approved for defense by the major professor and at least two critical readers, members of the supervisory committee who must be identified when the committee is established. When the major professor signifies his or her approval to the departmental chair, the student will submit three copies of the dissertation to the department office. Copies will be forwarded to the critical readers and they will be asked to respond in writing to the departmental chair within two weeks regarding the acceptability of the dissertation. (This process may require some iteration, but you are not ready to go to defense until it has been completed.) Once the major professor and critical

readers agree regarding the readiness of the dissertation for defense, copies for each member of the examination committee should be supplied to the departmental office for distribution. The defense will be scheduled by the departmental office as soon as possible, given scheduling considerations for examiners, but not sooner than two weeks from the date when copies are supplied to the departmental office.

The defensible version of the dissertation should have all figures and critical appendixes (techniques, math developments, etc.). A "defensible version" ideally is one which, if no changes are required as the result of unanticipated questions or issues raised during the defense, could be copied "as is" on the appropriate bond paper and submitted to the graduate office. As a matter of academic courtesy, an unusually lengthy dissertation should be available to members of the examining committee sooner than the period prescribed above before the scheduled defense. A good "rule of thumb" is to add one week for each additional 50 pages beyond 200 pages.

### **7.3 Grading Scale for Examinations**

9.0 - 10.0	Excellent. No errors, or only minor errors; fully comprehends material
8.0 - 8.9	Strong. Errors due to sins of omission or commission only; exhibits solid comprehension of material
7.0 - 7.9	Satisfactory. Contains substantive errors, but exhibits satisfactory comprehension of material
5.0 - 6.9	Marginal. Several significant errors, but may exhibit basic comprehension of material
3.0 - 4.9	Unsatisfactory. Basic errors that reflect unsatisfactory comprehension of material
0.0 - 2.9	Unacceptable. Little or no evidence of basic comprehension of material; no answer

## **8 Evaluation of Academic and Research Progress**

Each graduate student's progress toward meeting degree requirements will be evaluated annually by the student's supervisory committee, with a written evaluation placed in the student's record (Section 4.3). Progress will be evaluated in required course work as well as research-related aspects of a student's program. Examples of accomplishments that are useful in evaluating research include presentations given within the Department (brown-bag seminars), abstracts submitted to professional meetings, research manuscripts submitted to scientific journals, and student input on research proposals, in addition to timely completion of the prospectus and required examinations (Section 7). The University expects students to carry full course loads until all course work is completed (Section 5.4). Priority should be given to fulfilling any undergraduate requirements remaining at the time of admission to the graduate program (Section 5.1).

## **9 Bypassing the M.S. Degree**

A student who starts in the M.S. program at Florida State, but then wishes to bypass the M.S. degree and begin pursuing a Ph.D. degree, may declare this intention at any time. Upon recommendation by the student's M.S. supervisory committee, the admissions committee will evaluate the student for acceptance into the Ph.D. program according to normal protocol, including final approval by the departmental chair. If admitted into the Ph.D. program, the student proceeds according to the normal Ph.D. sequence of requirements: selecting a major professor, forming a supervisory committee, and formulating a program of studies (Sections 4.2, 4.3 and 4.4). A student who declares before the fourth semester must take the preliminary examination no later than the fourth semester since starting graduate study at Florida State. A student who declares after the fourth semester since starting graduate study must take the preliminary examination during the semester of declaration. Upon passing the preliminary examination, the student becomes a Ph.D. candidate and proceeds with the Ph.D. prospectus, etc. A student has two chances to pass the preliminary examination, as outlined in Section 7.2. Upon failing the preliminary examination, a student may continue pursuing requirements for the M.S. degree, including the M.S. comprehensive examination and prospectus if these requirements were not previously satisfied. Students who proceed toward a Ph.D. degree without having a M.S. degree must complete 30 hours of graduate work, and then fulfill the residency requirement (Section 5.3).

## **10 Milestones**

Graduate students are expected to make appropriate progress each semester on formulating, planning, and carrying out a program of original research, in addition to completing course requirements. All aspects of the student's program are to be planned in consultation with, and with the approval of, the major professor and supervisory committee, but the responsibility for appropriate progress lies directly with the student. Students are encouraged to complete the M.S. in two years and the Ph.D. in four years. Individual circumstances may require additional time of residency, but significant departures from these times are strongly discouraged, by the Department and the University. To that end, following is a timetable of important milestones, in both M.S. and Ph.D. programs, with dates of accomplishment for each. This list does not include all degree requirements (Sections 5 through 7), but highlights important stages of the student's research progress. We urge you to use this timetable to measure your progress throughout your graduate career at Florida State. Note that certain items in this timetable are required during the semester indicated: these include all items appearing in Semesters 1 and 2, and subsequent annual evaluations of progress in even semesters. The Comprehensive Examination (M.S.) must be taken by the end of Semester 3, but may be taken sooner. The Preliminary Examination (Ph.D.) must be taken by the end of Semester 4, but may be taken sooner. We strongly encourage Ph.D. students who have M.S. degrees to take the preliminary examination sooner than Semester 4. Finally, note that a student who starts in the M.S. program at Florida State, but then bypasses the M.S. degree and begins pursuing a Ph.D. degree, will have a slightly altered schedule of milestones depending on individual circumstances (Section 9).

## *M.S. degree*

### **Semester 1:**

- Choose major professor (Section 4.2)
- Form supervisory committee (Section 4.3)
- Formulate Program of Study (Section 4.4)

### **Semester 2:**

- Thesis Prospectus (Section 7.1)
- First annual evaluation of progress (Sections 4.3 and 8)

### **Semester 3:**

- Comprehensive Examination (Section 7.1)

### **Semester 4:**

- Thesis Defense (Section 7.1)

## *Ph.D. degree*

### **Semester 1:**

- Choose major professor (Section 4.2)
- Form supervisory committee (Section 4.3)
- Formulate Program of Study (Section 4.4)

### **Semester 2:**

- First annual evaluation of progress (Sections 4.3 and 8)

### **Semester 4:**

- Preliminary Examination (Section 7.2)
- Second annual evaluation of progress (Sections 4.3 and 8)

### **Semester 5:**

- Dissertation Prospectus (Section 7.2)

### **Semester 6:**

- Third annual evaluation of progress (Sections 4.3 and 8)

### **Semester 8:**

- Dissertation Defense (Section 7.2)

## **11 Teaching and Research Assistantships**

The responsibilities of Teaching Assistants (TA's) can include: teaching prepared course material to students in course laboratories, occasionally helping professors to proctor major examinations, and serving as graders for certain introductory courses. (Graders will not be responsible for interpretive evaluations of answers to essay-style questions.) Each TA is required to post and hold office hours for students seeking additional assistance with course material.

A half-time appointment is equivalent to a 20-hour-a-week job; if a TA finds that more time than this is required for completing the assigned responsibilities, the TA should notify the departmental chair. The various courses require different amounts of effort to prepare and present the laboratory material. The assignments of courses and responsibilities to TAs will be

made as equitable as possible. Course assignments for the Fall and Summer terms will be made soon after TAs are awarded in the Spring semester; course assignments for the Spring semester will be made early in the Fall semester.

Funding for Teaching Assistantships is granted through the legislature. Current statewide fiscal considerations may affect the number of positions available. The department will make initial decisions about TA awards around 15 March of each year for the following academic year. Prospective students to whom teaching assistantship offers are made normally have until 15 April to accept or decline these offers.

A graduate student with a B.S. degree should not expect to receive more than four semesters of TA support from the Department of Geological Sciences before concluding the M.S. degree. Doctoral students with a master's degree earned at Florida State University or elsewhere should not expect to receive more than six semesters of TA support from the Department of Geological Sciences while a doctoral student, although the Department will make an effort to extend this to eight semesters of support. Persons who are approved to proceed directly from a B.S. degree to a Ph.D. at Florida State should not expect to receive more than seven semesters of TA support from the Department of Geological Sciences, although again the Department will make an effort to extend this to eight semesters of support. A Teaching Assistant who has reached these limits of eligibility for holding an assistantship may compete for an appointment through the normal evaluation procedures. When supplemental funds are used for extra TA appointments, an appointed student must be informed of the specific duration of the appointment. The normal limits of eligibility (above) do not apply in such cases.

A student must maintain normal, satisfactory progress toward his or her degree requirements (Section 8) to remain eligible for departmentally awarded Teaching Assistantships.

Research Assistantships (RA) are available through individual faculty members. The responsibilities of a RA are determined by the individual faculty member.

## **12 Departmental Scholarships and Fellowships**

The Department of Geological Sciences annually considers applications from students for several small scholarships and fellowships. We will provide more detailed information to you about the application procedures and relevant deadlines in mid-Spring term; traditionally these awards have helped defray students' expenses for field and other research, generally carried out over the summer.

### *Joseph Banks Memorial Award*

This award is in memory of Joseph Banks, and is intended to help defray the thesis or dissertation research costs of one or more graduate students. To be considered for this award you must submit a short (no more than two double-spaced, typewritten pages) proposal for funds to support your thesis or dissertation work. This proposal should contain statements of: 1) the significance of the project, 2) your overall academic standing, (3) your financial need. In addition, a separate budget page should be included. The total budget should not exceed \$700. The departmental Awards Committee will evaluate the proposals, along with your overall academic records and financial need. Preference will be given to students whose research cannot be covered by grants or contracts and to students who have not previously received financial aid elsewhere.

*Bennett Frank Buie*

The Bennett Frank Buie Fund is used provide financial support to geology students for fieldwork or research.

*Robert L. Parker Fund*

The Robert L. Parker Fund provides awards to full-time geology students.

*Toulmin Memorial Fund*

The Toulmin Memorial Fund is used to help defray field and laboratory expenses for theses and dissertations in the areas of paleontology, stratigraphy, sedimentary petrology and sedimentology. These subjects reflect Dr. Toulmin's interests. The Awards Committee of the Department of Geological Sciences has full responsibility for selecting students who are to receive awards.

The Department is constantly in search of other forms of financial aid for our students, in addition to these awards. Although we may have no control over these external sources of aid, we will assist students who wish to apply for scholarships, fellowships and other financial aid offered by regional and national organizations.

### **13 Master of Science Core Curriculum**

The following courses are to be used to satisfy the core curriculum requirements for the Master of Science degree. Students must successfully complete one course from each of the following four groups. The list of courses included within each group might change from year to year, in part because of changing faculty. Students who have completed any of these courses will have satisfied the requirement for that group, regardless of subsequent changes in the list that might occur.

**Group 1: Mineralogy, Petrology, Geochemistry**

- 5265 Nuclear Geology
- 5267 Stable Isotope Tracers in the Environment
- 5295 Advanced Topics in Nuclear Geology
- 5298 Advanced Topics in Geochemistry

**Group 2: Structure, Tectonics, Geophysics**

- 5425 Tectonics
- 5435 Advanced Structural Geology
- 5455 Introduction to Geophysics
- 5465 Geomechanics
- 5495 Advanced Topics in Geophysics
- 5757C Remote sensing/GIS

**Group 3: Paleontology, Stratigraphy**

- 5346 Sedimentary Petrology
- 5576 Stratigraphy and Sedimentation of Transitional Marine Environments

5577	Sedimentary Basin Analysis
5696C	Mesozoic Planktonic Nannofossils
5697C	Cenozoic Planktonic Calcareous Nannofossils
5625C	Advanced Micropaleontology
<b>Group 4:</b>	<b>Hydrology, Geomorphology, Sedimentology</b>
5887	Environmental Geology I
5575	Coastal Geology
5573	Fluvial Processes
5135	Quaternary Geology
5736	Marine Geology
5827	Principles of Hydrology
5825	Physical Hydrology
5826	Numerical Modeling of Groundwater Flow
5885	Geologic Hazard Assessment