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# **GUIDELINES FOR GEOSCIENCE PH.D. STUDENTS UNIVERSITY OF NEVADA, LAS VEGAS**

## **GENERAL INFORMATION**

This document delineates the policies and procedures under which Ph.D. student's function within the Department of Geoscience. The Department recognizes that graduate study is much more than the meeting of mechanical deadlines, and the scholarly development of graduate students is of paramount concern to the faculty. Each student's growth is cultivated individually throughout the graduate experience as one attains the foundation, independence, intellectual curiosity, and self-discipline necessary to be a productive scientist. The awarding of the Ph.D. in Geoscience recognizes the achievement of these goals.

## **INTRODUCTION**

The Graduate College sets forth policies and deadlines in the Graduate College Catalog, which governs all graduate students at UNLV. New graduate students will follow the 2005-2007 edition of the Graduate Catalog. With department **and** Graduate College approval, the Graduate Catalog in effect during the semester in which degree requirements are completed may be used. In addition, the Department of Geoscience has developed the following guidelines, which are in some cases more rigorous and rigid than those of the Graduate College. These guidelines were generated in order to establish a framework that will assure uniformly high standards throughout the Department and to permit the best possible education for Geoscience Ph.D. students. Each student is obligated to be aware of both sets of policies and to review them periodically so that they are followed to the best of each student's ability. It should be understood that the policies of both the Graduate College and of the Department are somewhat flexible and written petitions for exceptions may be submitted for special cases in which extenuating circumstances occur. However, petitions for departures from the rules and guidelines must be approved in writing by the advisor, committee, Graduate Coordinator and Department of Geoscience Chair. If the petitions are granted, the policies may be modified, but students should not and can not rely on such a mechanism to circumvent the regulations. Questions regarding any of the policies can and should be addressed by the student's advisor, the Department Chair or the Department Graduate Coordinator. If the information provided by these sources within the Department is not satisfactory, Ph.D. students should make an appointment with either the Dean or Associate Dean of the Graduate College in order to have questions answered. Do not rely on hearsay information: see it in writing.

## **ADMISSIONS TO THE GEOSCIENCE PH.D. PROGRAM**

The establishment of standards of admission to graduate programs at UNLV is largely the responsibility of the Graduate College. Therefore, Ph.D. students should refer to the appropriate general section in the Graduate Catalog, but also be cognizant of the introductory section to Geoscience. The Graduate College receives the credentials of applicants and the Department recommends that an applicant either be denied admission or admitted with one of the following

classifications: (1) graduate standing, (2) graduate provisional, (3) contingency admit or (4) non-degree student. For either of the first two classifications there may be deficiencies listed or graduate course work specified. Contingency admission is given when additional admission materials are needed. It is the student's responsibility to comply with the terms of admission. Questions should be addressed to the Department's Graduate Coordinator. Students must make their advisor aware of admission conditions.

Review of applicants for admission includes evaluation of previous grade point average (GPA), courses taken, GRE scores, letters of recommendation, and students' statements of interests. The Department generally requires a grade point average of "B" or better for admission with graduate standing. Students with less than a "B" average may be admitted if supporting data (letters of recommendation, Graduate Record Examination, publications, etc.) are sufficiently strong. GRE general scores should be average or better and letters of recommendation should be positive. Applicants must have completed a Bachelor's Degree in geoscience or a related discipline. The department offers Ph.D. degrees in Geoscience with emphases in Geology, Geophysics, Soil Science, and Hydrogeology. The requirements for admission without deficiencies are listed in the Graduate Catalog. For the Geology emphasis, the Geoscience Department requires that, at minimum, the student has taken at least six of the following eight classes or their equivalent: GEOL 220/221 Mineralogy – Optical, GEOL 301 Fossil Record, GEOL 330 Geochemistry, GEOL 333 Geomorphology, GEOL 341 Structural Geology, GEOL 348 Field Geology I, GEOL 426 Igneous and Metamorphic Petrology, and GEOL 462 Stratigraphy and Sedimentology. In addition, a student must have taken an introductory geology class or they may be required to T.A. GEOL 101 after admission. Specific requirements for the Geophysics, Soil Science, and Hydrogeology emphases are listed in the Graduate Catalog. A student also must have taken at least 22 semester credits in supporting sciences, which include chemistry, computer programming, mathematics (calculus or a higher level), physics and statistics.

The admissions recommendation made by the Department to the Graduate College may be rejected if it is judged to conflict with Graduate College standards. Students with a field(s) of interest that is consistent with a field of research emphasized by a departmental faculty member will be considered for admission, if that discipline currently does not have enough participating graduate students to be considered filled.

In order for a currently admitted graduate student to change from one department to another department or program, the student must submit a new application for admission, the required application fee, and all necessary credentials to the Graduate College. Upon admission, the student must withdraw in writing from the original department

### **ADMISSION CONTINGENCIES**

Admission contingencies vary with each student and many students have none. The Department and Graduate College must receive all materials required at the time of matriculation no later than the end of the first semester. Progress toward completion of deficiencies noted at the time of matriculation should start in the first semester and be continuous until completed. Deficiencies must be completed as soon as possible.

## FINANCIAL SUPPORT

### Introduction

Financial support may be obtained from a variety of sources: (1) assistantships granted by the Graduate College upon the recommendation of the Department, (2) fellowships and scholarships awarded by the Graduate College or UNLV, (3) fellowships, scholarships, and assistantships sponsored by extra-university individuals and organizations that are awarded directly by the Department, Desert Research Institute (DRI) or the Harry Reid Center (HRC), (4) grants-in-aid of research awarded by both on-campus and off-campus organizations, (5) research assistantships provided to support funded research, and in rare cases (6) student can be admitted self-funded. **New students desiring financial support as a teaching or research assistant must have applications on file in the Graduate College by February 1<sup>st</sup> in order to be considered for support during Fall semester and students wishing to be supported in Spring semester must have applications on file by Oct. 1<sup>st</sup> of the preceding year.** Continuing students who have already been granted financial support and desire to have their support renewed must notify the departmental Graduate Coordinator. **It is the responsibility of the Ph.D. student to follow all guidelines related to their financial support.**

### Teaching Assistantships

The Graduate College allocates state-funded graduate assistantships to the colleges, which are then distributed to the departments. Because the Geoscience Department has a small number of these assistantships, positions are commonly used for Ph.D. students teaching in undergraduate laboratory sessions. Once students have applied for the assistantships, it is the responsibility of the Department to recommend to the Graduate College which applicants should receive available positions. The initial award of an assistantship does not assure the recipient of continuous support until a degree is attained. However, the Department attempts to continue support for initially funded Ph.D. students for four academic years under the conditions that a student performs duties satisfactorily and maintains satisfactory academic progress, and as long as the department has positions and funds. The expected performance of graduate assistants is described subsequently. See the Graduate Catalog for additional guidelines on assistantships.

### Fellowships

At present all fellowships available to Ph.D. students are awarded by the Graduate College and the UNLV President's Office. **Applications are typically due in the Graduate College or President's Office around February 1<sup>st</sup>.** Students who receive these awards usually have a 3.5 minimum GPA, high scores on the GRE and strong letters of support from faculty. If awarded a fellowship, a student receives a full academic-year stipend and tuition waiver, must enroll for at least 9 credit hours each semester of the Fellowship year, and must devote full time to academic studies. Additional guidelines for fellowships are listed under Scholarships in the Graduate Catalog and on the UNLV web pages.

### Research Assistantships

Typically these positions are funded by extra-university agencies, but are administered through the Graduate College. The duties are controlled directly by the grantee, usually a

graduate faculty member. The grantee and the Graduate Coordinator review graduate applicant files and the work of continuing students in the field of interest and select whom to award the positions. These positions carry the same rules and regulations as teaching assistantships, but the type of work required depends on the research project. The student is directly responsible to the grantee whether in the Department or at research units such as DRI or the HRC. Students working as research assistants may be fortunate enough to work directly on their dissertation project but commonly may work on research not directly related to their dissertation. Because of the uncertainties of extra-university funding, research assistantships may be granted on a year-by-year basis. See the Graduate Catalog for more guidelines.

### **Other Financial Support**

Money is available from a variety of sources to supplement student income and to defray some of the costs of dissertation research and preparation. Students may apply for scholarships through the Graduate College. Students must submit the FAFSA form to Financial Services each year in order to be considered for these scholarships. The UNLV Graduate and Professional Student Association (GPSA) awards grants-in-aid of research twice a year. Students must contact the organization directly. Additional forms of financial aid are listed in the Graduate Catalog.

Information is available within the Department related to applying for research support from Sigma Xi, the American Association of Petroleum Geologists (AAPG), the Society of Sedimentary Geology (SEPM), and the Geological Society of America (GSA), all of which award grants-in-aid of student research in geoscience. A student's advisor or the Graduate Coordinator can provide information regarding these applications. Many of them require a short proposal regarding the project and deadlines occur throughout the year.

Scholarship money is also available within the Department. These awards are typically given to students in the earlier stages of their program (i.e. approximately initial 2-3 years for Ph.D. students) and are intended primarily to support fieldwork and data collection phases of research. Award of these scholarships is based on a balance of academic performance, research progress and financial need. Scholarships are designed to provide partial support; students are expected to also pursue other funding. To be eligible for one of these scholarships, a Ph.D. student must file a departmental application and have filed a FAFSA with financial services. Other requirements are spelled out on the application form. For questions related to scholarships talk directly to the faculty chair of the committee. The deadline for applying is approximately January 31 each year.

### **REQUIRED AND EXPECTED PERFORMANCE OF GRADUATE ASSISTANTS**

Details regarding graduate assistantships (teaching and research assistantships) are outlined in the Graduate Catalog and students are responsible for knowing the requirements and expectations. Graduate assistants are to be available for work from one week prior to the start of Fall classes through Fall finals and from the day after the New Years holiday through Spring final examinations. Graduate assistants should expect to work on average 20 hours per week. New graduate assistants are expected, as part of their contractual obligations, to attend all orientation events that pertain to them (the Graduate Coordinator will notify them in advance).

These sessions are offered at the beginning of each fall semester. Also, helpful suggestions sometimes can be obtained through the GPSA. If a student is supported as a teaching assistant they must keep in contact with the professor in charge of the assigned class and with the Graduate Coordinator of the Department who may assign additional tasks within the scope of the T.A. position. Research assistants must contact the graduate faculty member in charge of funding the assistantship. Research assistants are guided by the same rules and regulations as teaching assistants, and consequently they may be asked to perform departmental duties as well as research.

## **ACADEMIC POLICIES**

The Department of Geoscience adheres to the academic policies outlined in the Graduate Catalog and each student should be thoroughly familiar with them. A key policy that all graduate students in Geoscience must adhere to is the "College of Sciences Statement of Policy on Plagiarism". This policy is appended to this document.

## **SATISFACTORY PROGRESS**

Every semester the graduate faculty members of the Department evaluate the progress of each student in the program. Students and their advisors receive an evaluation from the Graduate Coordinator after the end of each semester. Any incomplete tasks/classes or unsatisfactory remarks must be addressed. The department's policy on evaluation of a student's progress and the resulting actions are outlined below.

### **Satisfactory or unsatisfactory progress of Ph.D. students in the Department of Geoscience**

1. The graduate faculty members of the Department of Geoscience review each Ph.D. student at the end of each semester. Every student is individually notified regarding his or her progress in the Ph.D. program. Students should be familiar with both the Graduate College and the departmental policies that the faculty will follow in making their decisions.
2. Evaluation of a student's progress is in the following areas: contingencies/deficiencies at the time of matriculation; filing of a degree program, committee form and dissertation prospectus with the Graduate College; filing a dissertation proposal with the department; course grades; dissertation work; performance on the comprehensive exams; and performance as a Graduate Assistant, if funded. Specifics regarding each of these topics are contained in the following sections of this document.
3. If a student is making unsatisfactory progress, the student may be separated from the program or put on probation. The problems or requirements stated in the letter to the student must be corrected or fulfilled during the first semester of probation. If they are not, or if there is further unsatisfactory progress during any subsequent semester, the student will be placed on a second semester of probation during which time the student is not eligible for an assistantship or scholarship from the department or university. If, at

the end of the second semester of probation, the student's progress remains unsatisfactory, then the student will be separated from the program.

4. If a student regards the faculty's decision or treatment as unjust, a request may be made of one's advisor, the department chair, or the Graduate Coordinator to call a meeting of the graduate faculty. The student will present the case in writing to the faculty one week prior to the meeting and may choose to be present at the beginning of the meeting for discussion of the situation. The graduate faculty members will deliberate the case without the student being present and, within one week, render their decision in writing. If a student continues to reject the faculty's findings, a grievance may be pursued through university channels.

## **DISSERTATIONS**

Students are urged to download the Guide to Preparing & Submitting a Thesis or Dissertation manual from the Graduate College's web page when the dissertation is about to be written. Each student must follow these guidelines to the letter or the dissertation will not be accepted by the Graduate College. Questions may be addressed to the student's adviser or the Thesis-Dissertation Director at the Graduate College.

Ph.D. students should have extensive discussions with their advisors and possibly their committees before embarking on writing a dissertation. Every advisor follows a different procedure depending on the project undertaken and the capabilities of the student. Remember that a dissertation need not be a long document. Ph.D. dissertation lengths vary, but a series of articles ready to submit to journals are strongly encouraged. A minimum of three manuscripts that are ready to submit is acceptable. The writing style should be equivalent to one in a professional journal. Recently completed dissertations can be used as guides, but realize that they are of variable quality.

For guidance, we suggest that student's have a completed first draft of the text, figures and maps to the advisor no later than February 1st for May graduation, no later than March 1 for an August graduation, and no later than September 1<sup>st</sup> for a December graduation. A student's advisor may have read sections of text prior to those dates, but these deadlines are aimed at a completed draft. The advisor should have at least three weeks to read and comment on the student's work. Remember, the faculty members have other teaching and research commitments, and other graduate students. Each student must be prepared to make numerous revisions quickly and return the revised drafts to the advisor until achieving a draft that the advisor deems acceptable to be distributed to the committee members. Remember that the advisor may need three weeks to reread each draft submitted. Depending on the advisor's comments, it may be helpful to set a tentative defense date with all committee members to obtain a realistic view of their schedules. Also at this time, the Ph.D. student should advise committee members of progress so the committee can be aware that they may soon receive a draft of the dissertation. Committee members may outline their time constraints to the student (i.e. meetings, field trips, etc.). The Graduate College representative committee member may choose to see the first draft or perhaps only the defensible copy: ascertain their input and keep them apprised as appropriate. Once a student's committee has read the dissertation, which includes nearly final

figures, maps, and text, they may suggest revisions and wish to see revised drafts before they move to approve it as a defensible dissertation. Any suggested revisions should be discussed with the committee member and advisor. It is the obligation of the committee chair to reconcile differences of opinion with regard to content and organization of the dissertation. This is achieved most constructively through meetings of the candidate with the committee.

Students writing a dissertation chapter that is a manuscript to be submitted to a journal for publication must have that chapter reviewed and approved by the dissertation committee **prior** to submitting the manuscript to the journal. Committee approval may require editing and revisions. Three weeks should be provided to the committee to review the manuscript. This chapter may be submitted to the committee either prior to or at the same time as the entire dissertation.

Once the committee has deemed a draft as defensible, the student must make any final changes and display the draft in the Department office for one week prior to the final examination. This displayed copy should be nearly a final version. The text should be free of grammatical and typographical errors, and figures and maps should be drafted and very near their final form, so that any person who wishes to read it before the exam can do so easily.

After passing the final exam (which includes the defense of research), where yet other changes to the dissertation may be suggested, the final document should be quickly prepared. Present this document with additional cover sheets to all committee members for their final approval and signature.

Two copies of the dissertation, unbound and signed by all members of the examination committee, must be deposited in the Graduate College office in final form at least two weeks prior to the end of instruction within the term in which the student will graduate. The Graduate Dean must give permission for extension of this deadline in writing. The Department strongly recommends adhering to the deadline and only under exceptional circumstances will it support the request to the Dean.

In addition to the two copies of the final dissertation required by the Graduate College, the Department requires that two unbound copies be submitted to the Department Chair or office staff when the document is submitted for the Chair's signature. One of these copies should be on high-quality paper. These copies will remain in the Department office for immediate use and photocopying. It is considered proper conduct to also give a bound copy to the advisor at this time. The Department usually pays the cost of binding departmental copies.

## **FINAL EXAMINATION**

**The regulations for the final examination, or defense, for Masters and Ph.D. candidates are discussed in the Graduate Catalog and should be read by every candidate.** The Department adheres to the general guidelines of the Graduate College. The exam must occur no later than three weeks before the end of classes in the semester in which the student wishes to graduate. It should not be scheduled during school holidays, weekends, or the summer unless all committee members agree in advance. The composition of the committee shall not be changed to facilitate scheduling during these periods.

In detail, the format of the final examination in Geoscience is as follows. During the time in which the final exam is scheduled, the candidate presents, in a professional manner, an oral

summary of the dissertation stressing the major conclusions of the research. The presentation should be about 25 minutes in length and may not exceed 45 minutes. This presentation must be open to a public audience including non-graduate faculty, students, and interested people from the community and must include all members of the examining committee. All members of the Advisory Committee must be present during the oral defense. Following the presentation, the public audience may ask questions related to the dissertation. During this time, the graduate faculty and particularly the examining committee should refrain from questioning the candidate. At the end of this brief discussion period, the public audience will be excused. As specified in the Graduate Catalog, the candidate will be fully examined with only graduate faculty members present unless the student's committee has unanimously approved the presence of other individuals. It is during this questioning period that the student must be able to defend the findings and methodology of the dissertation and to demonstrate a comprehensive understanding of a broad field of study as well as a detailed understanding of a more limited field. The oral defense must be conducted not less than three weeks before the last day of instruction of any given semester/term.

After completion of the question and answer period, the student will be dismissed, and the examination committee will evaluate the student's performance with the advice and consultation of any other graduate faculty members that may be present. As noted in the Graduate Catalog, "The advisory committee must unanimously pass the student. If the committee votes unanimously to fail the student or the vote is not unanimous to pass, the student, in conjunctions with his/her advisor, may request the committee to administer a second examination. The student must wait at least three months before taking the second examination. The Department may require additional course work, substantial reworking of the dissertation or whatever is believed necessary to prepare the student for the second examination." At the conclusion of the committee deliberation, the committee should complete and sign the "Final Examination for Advanced Degree" form for the Graduate College and discuss their conclusions with the student.

To prepare for this examination, a student is advised to review all graduate course work, all details of the dissertation, and all current literature related to the dissertation and their field of interest. The committee will be examining to ascertain whether the student has developed a sufficient foundation with both depth in their research and breadth in geoscience. The student may be called upon to extend one's knowledge beyond "what one knows" by testing the use of sound scientific reasoning, or the candidate may be asked to state an opinion regarding particular papers or theories to test whether the candidate possesses the ability to be critical of our science. A Ph.D. student should be in his/her most alert and educationally honed state to pass this final examination, which is only in part a dissertation defense.

## **PROCEDURES TO BE FOLLOWED AFTER ADMISSION**

### **Introduction**

Although there is no single time frame for students seeking a Ph.D., a typical Ph.D. student may spend four years completing the required coursework and research. Therefore, the departmental advisor for each student will strive to provide four academic years of support. During this time the student must be a teaching assistant or instructor for at least one semester.

The graduate faculty members of the Geoscience Department review every student's progress in the program each semester and students receive a written evaluation.

The degree must be completed within six years (eight years if the Doctoral student does not have a Master's degree), or credit for course work completed will be lost. Also, all students (whether full time or part time) must be continuously enrolled in accordance with Graduate College guidelines, as outlined in "Academic Policies" section of the Graduate Catalog.

It is the student's responsibility to meet all deadlines for forms and exams, and to fulfill all degree requirements. Students will be dropped from the program and separated from the Graduate College if they fail to fulfill these requirements.

### **Prior to the beginning of the first semester**

Prior to enrolling for the first semester, Ph.D. students must confer with the Graduate Coordinator and with the advisor listed on their admission form that was chosen based on the student's statement of interest. During the meeting, it will be decided which courses should be taken during the first semester. These should include GEOL 701 and some of the deficiencies or graduate courses that may be listed on the admission form. Students admitted in Spring must take GEOL 701 in their second semester. A Ph.D. student who earned an M.S. degree from the UNLV Geoscience Department is not required to retake GEOL 701.

### **During the 1<sup>st</sup> semester**

Prior to the start of the first semester, Ph.D. students must meet with their assigned adviser to decide upon course work to be taken during the first year. Before the end of the first semester, Ph.D. students must **select an advisor who consents to supervise the research.**

### **During the 2<sup>nd</sup> semester**

Prior to the end of the second semester after admission to UNLV, Ph.D. students must **(1) clear all deficiencies and admission contingencies, (2) identify a dissertation topic, (3) establish a doctoral advising committee, (4) meet with the committee for the diagnostic interview (to provide recommendations for the Degree Program), and (5) establish and submit to the Graduate College an approved Degree Program and an Advisor Committee form.** The Appointment of Committee for Dissertation Form must be submitted to the Graduate College not later than the last day of instruction of the 2nd semester of enrollment (see section on selecting an advisor and dissertation committee). After establishing a committee, the student will schedule a time to meet with all committee members for the diagnostic interview. The purpose of the diagnostic interview is to assist new Ph.D. students in identifying any curricular strengths and weakness and set up the degree program. The Geoscience Department requires that the Degree Program form be submitted shortly after the Diagnostic Interview and prior to the beginning of the third semester. Students may request a maximum of 15 graduate credits taken at UNLV (9 credits taken at other institutions) prior to admission be included in the graduate degree program, providing those credits were not used to fulfill undergraduate requirements and a grade of B (3.00) or higher was achieved.

### **During the 3<sup>rd</sup> semester**

Before the end of the 3<sup>rd</sup> semester Ph.D. students must prepare a dissertation proposal and satisfactorily pass a Proposal Defense Examination. The Proposal Defense Examination focuses on the dissertation proposal and the student's ability to perform the research. It includes a formal oral presentation of the student's dissertation proposal, research to date, and questions by the dissertation advisory committee on the dissertation topic. The Proposal Defense Examination is to be taken prior to the Comprehensive Examination. The Graduate College requires that the exam be taken at least three weeks before the last day of instruction of the semester.

A Dissertation Prospectus form must be approved and submitted to the Graduate College at the earliest possible date after successfully passing the Proposal Defense Examination. In addition, the complete and revised Dissertation Proposal must be submitted to the Geoscience office after successfully passing the Proposal Exam (see proposal section below).

If a student anticipates consultation with departmental faculty or use of Department facilities to conduct research or for the preparation of a proposal, then he/she must enroll in dissertation credit hours reflecting the amount of faculty time and facility use. Before enrolling for dissertation credit hours, the student's advisor must be consulted to determine the amount and type of work to be completed and to determine the number of credits during the given semester. This should be viewed as a contract, and the advisor will judge each semester whether or not the stated work was completed. Such work will be a criterion used in the evaluation of satisfactory or unsatisfactory progress of a Ph.D. student.

#### **During the semester after completing coursework**

Students will take the Comprehensive Examination the semester after the completion of all required course credits or before the end of the fifth semester, whichever comes first. Required course credits are those courses listed on the Degree Program form. The Degree Program form should not contain significantly more courses than needed to fulfill the minimum number of course credits required. Failure to take this exam prior to three weeks before the last day of instruction of the semester after completing all required course work or the end of the fifth semester (whichever comes first) can result in the separation of the student from the Ph.D. program.

#### **During all semesters prior to the final one**

After admission to the Ph.D. program, the degree must be completed within 6 years (or 8 years for students without a Masters Degree). Students who hold graduate assistantships are required by the Graduate College to register for a minimum of 6 semester hours of credit each semester (see Graduate Catalog); the Department of Geoscience recommends that graduate assistants register for 9 credits, including dissertation credits, each semester. All students who are working on a dissertation must register for 3 semester hours of credit each semester until the document has been completed and has been given final approval (summers excluded). However, students intending to complete, defend, submit a thesis to the Graduate College, and/or graduate during the summer term must be registered for a minimum of 3 credits. The three credits may be dissertation or non-dissertation credits. In rare cases a student may be permitted to complete the thesis in absentia waiving the registration requirement. Students must petition the Graduate College for approval. If approved, the advisor, Graduate Dean, along with the student will determine the requirements for completion of the work. A minimum of 12 credit hours of GEOL

799, Dissertation, is required for graduation. Important information is available in the "Academic Policies" section of the Graduate Catalog. Students who are not registered for academic work within a calendar year are separated from our program and will need to reapply for admission to the Graduate College should they wish to continue. Exceptions to the above policy, as in the case of a request for a leave of absence, are made only in advance with the approval of the student's advisor, Department Chair (or delegate – typically the Graduate Coordinator), Academic Dean, and the Graduate Dean.

For Ph.D. students, annual committee meetings are required. Annual committee meetings keep the entire committee apprised of the student's progress, and provide a forum to discuss any potential changes in the plan. It is strongly advised that if any modifications of proposed work are anticipated at other times during the year (particularly if these changes are major), that a committee meeting be scheduled at the first opportunity, without waiting for the annual meeting. The Diagnostic Interview, Proposal Defense Examination, and Comprehensive Examination meetings can be counted as annual committee meetings.

For Ph.D. students, satisfactory performance on comprehensive examinations is required. See the section on comprehensive examinations.

### **During the final semester**

**A Ph.D. student must** (1) apply for graduation and pay fees prior to the deadline listed in the class schedule for each term; (2) allow *at least* three weeks for the committee to examine the dissertation, prior to scheduling the final examination (*dissertations must be submitted to the committee no less than eight weeks prior to the last day of instruction in the term in which the student will graduate*); (3) obtain a statement from all committee members that they deem the written dissertation defensible; (4) schedule the final examination (defense) with the committee; (5) deposit the defensible dissertation draft in the departmental office at least one week prior to the exam, and notify the faculty of its presence and the date, time, and place of the exam; (6) pass the final examination no later than three weeks before the end of classes; (7) submit two unbound copies of the dissertation (one on high-quality paper) and the information required for GEOREF to the Department office staff; and (8) deposit two signed, unbound copies of the dissertation in the Graduate College two weeks before the end of classes. Students who are graduating with a Ph.D. are encouraged to participate in the university commencement ceremony. However, you may not participate in commencement prior to completing all degree requirements.

Students are advised to determine these deadline dates, verify them, and mark them on a calendar. Students must be highly organized during their final semester. The most difficult deadlines for most Ph.D. students to meet are (1) the completion of a defensible draft of the dissertation and (2) the completion of the dissertation for deposition in the Graduate College. Students must remember that they are not working on this alone, and are relying on the efforts of five other very busy people: the committee. Therefore, students must discuss plans with the committee early. Read the guidance given above in the Dissertation section.

All members of the committee must be satisfied with the dissertation prior to scheduling the defense. Remember that three weeks must be allowed for the committee to evaluate the dissertation prior to scheduling the exam. The final exam is open to all UNLV graduate faculty members. At least one week prior to the final exam the student must put the best and most

complete copy of the defensible dissertation in the Department office for public review. Students need to notify the Department faculty in writing of its presence, and see to it that the date, time, and place of the final exam are posted.

While the dissertation is available for review in the office, the student should make final preparations for the final exam. However, to successfully pass the final exam, which includes a defense of the dissertation, a student should have been studying and preparing long before this point. Upon passing the exam, the Ph.D. candidate will make any needed changes in the dissertation and submit the final document to the department and to the Graduate College. The candidate should verify at this time that the Graduate College holds a "Final Examination for Advanced Degree" form that should have been submitted after the final exam was passed and the final draft approved. If they do not have this form, the candidate must see that it is submitted immediately or the student will not graduate.

Many of our Ph.D. students do not meet the deadlines for Spring graduation. If a Ph.D. student applied for Spring graduation and missed the deadlines, the student must reapply for August or December graduation and pay additional fees. If a student anticipates not making a Spring graduation, then the initial filing should be for August. Functionally, this change only gives an extra month to work on the dissertation. The student must discuss the expected schedule of events with the committee, and it must be approved by them. It is best if final exams for August graduation can be taken prior to the end of Spring final exam period and a final draft of the dissertation is ready for the committee to sign shortly thereafter. Remember, faculty members are not employed by the University during the summer and many are away at meetings or doing field research on externally-funded grants. Committee members may not be changed just to achieve an August graduation.

## **SELECTING A DISSERTATION ADVISOR AND COMMITTEE**

At the time of admission, new Ph.D. students are assigned an advisor based on their stated field(s) of interest. This person may remain the student's advisor, but the student or the advisor may elect to change this arrangement. Each student should talk to faculty members during the first semester to determine with whom they would like to work, and who wishes to supervise a specific student's research. For Ph.D. students, an advisor should be chosen before the committee, and the doctoral advising committee should be appointed prior to the end of the 2nd semester. The Ph.D. student and the advisor need to identify additional committee members that will best augment the research requirements. Both breadth and related expertise need to be balanced. The doctoral advising committee will normally consist of the advisor (committee chair); two additional members from the graduate faculty of the Department of Geoscience; a fourth faculty member from UNLV Geoscience, a relevant discipline at UNLV or from outside the university; and a graduate faculty member from another department to serve as the Graduate College representative. If the identified faculty members are willing to serve, then the student should have them sign the examining committee form. The name of the advisor, committee members, and external member must be submitted to the Graduate College. The Graduate College must approve the Graduate College representative suggested by the student and the advisor. The student should talk to this person and ask how much they wish to be involved in the program and progress. Ph.D. student must not ignore this person during the years spent in the

graduate program, or there may be repercussions that delay completing the degree. Students must submit the Appointment of Advisory Committee form to the Graduate College before establishing the degree program.

During a student's graduate study, the student or the advisor may choose to discontinue the relationship. Depending on the timing or cause for this change, the student may have to also change dissertation topics and resubmit a new dissertation proposal. In this case, the student needs to formally present the new proposal to their committee. Such changes are unusual, but do occur due to illness, sabbatical leave, or other problems. A change of advisor or any member of the committee must be approved by the Department as discussed earlier and submitted to the Graduate College for approval. No changes may occur during the final semester of the Ph.D. program.

### **DIAGNOSTIC INTERVIEW**

For Ph.D. students, a diagnostic interview must be conducted. The purpose of the diagnostic interview is to assist the advising process for new Ph.D. students and to identify any of the student's curricular strengths and weakness. The diagnostic interview should be scheduled with the committee during the second semester in the program. Generally the earlier this is done, the better.

The committee must be established prior to holding the Diagnostic Interview. During this meeting, the student and the committee will determine which courses (Degree Program) the student needs to take in order to achieve success in the student's area of research interest and on the Comprehensive Examinations.

Ph.D. students must have a *basic knowledge* in 3 fields within their emphasis within geoscience. Knowledge in these areas will be tested during the Comprehensive Examination so the Diagnostic Interview should take into account the student's background with regards to the areas that will be tested during the Comprehensive Exam. If the structure of a Ph.D. student's committee is not representative of three of these areas, then an additional faculty member must be present during the diagnostic interview to evaluate the student's basic knowledge in that field of emphasis.

After the student and the committee have established the courses that a Ph.D. student will take, the student must file the Degree Program form. The Degree Program form should not contain significantly more courses than needed to fulfill the minimum number of course credits required.

### **COURSE GRADES**

Satisfactory progress includes maintaining a minimum of a 3.00 GPA in all graduate-level courses. One grade of B- is permitted in the courses listed on the degree program as long as the overall graduate GPA remains at or above 3.00. A B- is permitted in the Ph.D. program, because Ph.D. students are encouraged to take graduate-level classes outside of their main subject area as well as outside of Geoscience. Receiving two grades of B- or one grade of C+ or lower will place a student on academic probation even if the GPA remains above 3.00. The student will be removed from probation when the C+ or one B- is replaced with a B or higher

grade in that course or that course is replaced on the degree program with a course having a grade of B or better, providing the GPA remains above 3.00. Receiving two grades of C+ or lower during the period of Ph.D. study will be grounds for automatic separation of the student from the Ph.D. program.

Any grade of incomplete received by a Ph.D. student must be completed within one semester or the student will be put on probation. If there are extenuating circumstances, an extension may be received in writing from the Graduate Coordinator or the chair of the department, with approval of the Graduate College.

## **PH.D. DEGREE PROGRAM**

The degree program outlines the courses the student will complete for the Ph.D. The student, the advisor and the entire doctoral advising committee will design the degree program during the diagnostic interview. It is **strongly suggested** that Ph.D. students establish and submit the Degree Program to the Graduate College during their 2nd semester. It is *required* by the Graduate College that this be done prior to completing 16 credits of course work toward the degree (See Graduate Catalog on The Degree Program). The student may make minor changes in the Degree Program with advance approval from the Department and the Graduate College. Any changes in the Degree Program require filing of a Change to Degree Program Form. The Degree Program does not include deficiencies listed at the time of admissions, although a student must take those classes.

A minimum of 60 credits past the baccalaureate or bachelor's degree is required to earn a Ph.D. Students entering the Ph.D. program with an M.S. degree in geology or a related field will be awarded 24 credits toward the Ph.D. Credits taken at another institution will be considered for transfer; however, at least two-thirds of the minimum number of credits required for the degree, not including dissertation credits, must be taken at UNLV. Course selection is based on the student's research objectives and requirements for the Comprehensive Examination. The 60 credits required of those students entering the program with a B.S. degree must include 12 credits of GEOL 799 (Dissertation) and at least 24 course credits at the 700-level. The 36 credits required of those students entering the program with an M.S. degree must include 12 credits of GEOL 799 and at least 12 course credits at the 700-level. In both cases, the 700-level courses must include GEOL 701 unless the student took this class previously at UNLV; remaining courses may be at the 600- or 700-level. Although more course work and dissertation credits may be taken, only 12 credits of GEOL 799, and 48 course credits for those entering the program with a B.S. or 24 course credits for those entering the program with an M.S., will count towards the degree program.

Ph.D. students are encouraged to take courses from outside of Geoscience; however, a minimum of 15 credits must be in Geoscience (GEOL) courses. A maximum of 3 credits of Independent Study (GEOL 793) are permitted, except in special circumstances in which case permission from the doctoral advising committee, the department Graduate Coordinator and the department chair is required. We strongly recommend that students take at least one class outside their major area of emphasis within Geoscience and encourage Geoscience Ph.D. students to take graduate-level courses outside of the department.

## ANNUAL COMMITTEE MEETINGS

Ph.D. students must meet with their committees on an annual basis. Meetings with the committee for the diagnostic interview, proposal defense, comprehensive and final exams satisfy this requirement.

## DISSERTATION PROPOSAL

The dissertation will report the results of significant original research performed by the student and written in lucid and succinct scientific prose. **The selection of the research problem is the responsibility of the individual student, not that of the faculty member with whom the student desires to work.** However, input from a faculty member is required. In addition, a faculty member may decline to direct any individual's project. A student must consult with a faculty member and obtain their consent to advise the dissertation problem(s) suggested prior to initiating research. A Ph.D. student who has identified a research problem through discussion with an advisor should prepare a research proposal. Students are helped through the initial phases of the proposal in GEOL 701 and by working with their advisor. The proposal should be submitted to the student's advisor as early as possible, certainly before beginning the actual project, and well before the end of the student's second semester. While taking GEOL 701 and working on their proposal, students should submit at least one draft of the proposal to their advisor.

The Ph.D. student should file the Dissertation Prospectus form by the end of the second semester. The student will complete a longer dissertation proposal and formally present that to the committee during the Proposal Defense Examination. The complete dissertation proposal must be submitted to the committee at least 2 weeks prior to the date of the proposal defense exam. Following the Proposal Defense Exam, a student should revise the dissertation proposal, following the suggestions of the committee members. The revised version of the proposal must be approved by the entire committee. The revised version of the proposal is subject to an open review prior to receiving Department approval. To satisfy this review requirement, the written and committee-approved dissertation proposal must be duplicated and deposited in the Department office for a two-week period excluding holidays and summer after passing the Proposal Defense Exam. The student must notify the Geoscience faculty in writing that the proposal has been deposited for their review. Any faculty member may notify the student's adviser in writing of any suggestions or why the faculty member does not believe the proposal should be approved. If a request for discussion is not received within two weeks, the proposal is automatically approved by the Department. If any individual's objection to a proposal cannot be satisfied through the committee, the objection must be brought before the graduate faculty of the Department.

A dissertation proposal submitted by a Ph.D. student in the Department of Geoscience should normally include a 250 word abstract, 15 or fewer pages of double-spaced text plus supporting maps, graphs, tables, and references. All proposals must include a realistic budget and time schedule. The proposal must outline the problem(s) concisely and clearly, with a statement of the problem(s) or hypotheses to be addressed and the importance to the discipline, proposed methods of approach, and expected results or contribution to geoscience. The proposal

should be sufficiently well documented with citations from pertinent literature to assure the faculty that the student is aware of the work of other investigators in the proposed and related fields. The adviser and the advisory committee should assist students in writing concise proposals and should consider proposals carefully before endorsing them.

### **Suggested format of dissertation proposal**

1. Cover sheet required (see attached)
2. Abstract - 250 words.
3. Proposal.

Text should clearly answer the following questions:

- a. What is the hypothesis to be investigated or geologic problem to be solved?
  - b. Why is the subject significant?
  - c. How will the hypothesis be investigated or the geologic problem be solved?
4. References cited
  5. Budget
  6. Estimated time schedule

## **COMPREHENSIVE EXAMINATIONS**

The Department of Geoscience requires the successful completion of two examinations for Ph.D. students prior to advancement to candidacy for the doctoral degree: the Proposal Defense Examination and the Comprehensive Examination. The Graduate College requires a unanimous decision by the committee to pass both exams. Students must be enrolled in the semester in which they take the exams.

The Proposal Defense Examination is usually completed prior to the end of the third semester and must be completed by the end of the fourth semester. However, it is recommended that full-time students take this exam during their second semester. The Graduate College requires that this exam be taken at least three weeks before the end of the semester. Part-time student should take this exam after completing 9 course credits and prior to completing 18 course credits. The Proposal Defense examination is to be taken prior to the Comprehensive examination. The Proposal Defense examination focuses on the dissertation proposal and the student's ability to perform the research. It includes a formal oral presentation of the student's dissertation proposal (about 25 minutes long), research to date, and questions by the dissertation advisory committee on the dissertation topic.

The Comprehensive Examination will be taken either the semester after all course work is completed or before the end of the fifth semester, whichever ever comes first. Ph.D. students will earn their degrees in one of the following emphasis areas: Geology, Geophysics, Soil Science, or Hydrogeology. Ph.D. students must have a basic knowledge of Physical Geology and a comprehensive knowledge of three fields of geosciences outlined within the respective emphasis areas listed below. In addition, students must possess greater knowledge and understanding in their area(s) of specialization and related topics.

The format and content of the Comprehensive Examination will be determined by the student's doctoral examination committee, with approval of the department Graduate

Coordinator. The following lists are provided as guidance in selecting fields within each Geoscience Ph.D. emphasis.

**GEOLOGY EMPHASIS:**

Comprehensive Examination for Ph.D. students in the geology emphasis:

- Hydrogeology and Hydrology
- Sedimentology and Stratigraphy
- Paleontology
- Quaternary Geology and Geomorphology
- Soil Science
- Structural Geology and Tectonics
- Igneous and Metamorphic Petrology
- Geochemistry and/or Geochronology
- Economic Geology

**GEOPHYSICS EMPHASIS:**

Comprehensive Examination for Ph.D. students in the geophysics emphasis:

- Geophysics
- Sedimentology and Stratigraphy or Paleontology
- Quaternary Geology and Soil Science, or Geomorphology
- Structural Geology and Tectonics
- Igneous and Metamorphic Petrology or Economic Geology
- Hydrogeology

**SOIL SCIENCE EMPHASIS:**

Comprehensive Examination for Ph.D. students in the soil science emphasis

- Low temperature geochemistry
- Hydrology and environmental science
- Quaternary Geology or paleoclimatology
- Geomorphology and surficial processes
- Soil Science
- Sedimentology and Stratigraphy

**HYDROGEOLOGY EMPHASIS:**

Comprehensive Examination for Ph.D. students in the hydrogeology emphasis

- Low temperature geochemistry
- Hydrology and hydrogeology
- Quaternary Geology and paleoclimatology.
- Geomorphology and surficial processes
- Sedimentology and Stratigraphy
- Structural Geology

The Comprehensive Examination can be taken either entirely as an oral examination or with both oral and written components. The decision of which of these options to take requires approval by the student's doctoral advising committee.

The doctoral advising committee will administer the Comprehensive Exam. In cases where the advising committee lacks representation in the three discipline areas that will constitute the exam subject areas, substitution of other graduate faculty of the Geoscience

Department will occur. The doctoral advising committee in conference with the Graduate Coordinator shall decide upon any such substitution.

Students who fail to pass either the Proposal Defense or the Comprehensive Examination on the first attempt must successfully complete a second examination (as specified by the doctoral advising committee) within the next six months in order to remain in the program. The basis of evaluation for the repeated exam should be at the same level as for the first exam. Students who entered the program with a baccalaureate degree and who fail the second examination may be allowed to continue as a Master of Science student with the consent of the doctoral advising committee. Students who entered the program with a Master's degree who fail the examination a second time will be separated from the program. A student who has successfully passed both the Proposal Defense and Comprehensive Examinations will be admitted to candidacy for the Ph.D. degree.

To schedule these examinations, the student will consult with the committee to establish mutually convenient times. For the oral examinations, allow for a three to four hour period. Also, the student must submit a dissertation proposal, approved and edited by the advisor, to the doctoral advising committee at least two weeks prior to the scheduled date of the Proposal Defense Examination.

### **ADVANCEMENT TO CANDIDACY FOR THE DOCTORAL DEGREE**

A student who has successfully passed both the Proposal Defense and the Comprehensive Examinations and completed at least one half of the degree program course work, will be admitted to candidacy for the Ph.D. degree. The Prospectus Approval form must be submitted to the Graduate College to advance to candidacy. The semester/term of the advancement is recorded on the student's official UNLV transcript.

### **PROGRESS ON DISSERTATION**

Full-time students should complete the Ph.D. program within 4 years of matriculation. The department and advisor will strive to provide four academic years of support. Our four-year limit on office space and Ph.D. student funding is a reflection of this four-year program and may be extended only with special permission from the Department Chair, Graduate Coordinator, and the student's entire committee. Therefore, if a Ph.D. student is active in the department and / or working on a dissertation, they should enroll in dissertation or dissertation research credit hours every semester following their first. The number of credits should reflect the amount of time the student is working on the dissertation project, the use of university facilities, and advisor's time.

Before enrolling for dissertation credit hours, the student's advisor must be consulted to determine the amount and type of work to be completed for a specified number of credits during any given semester. This should be viewed as a contract, and each semester the advisor will judge whether the stated work was completed. If the work was either not completed or was of an unsatisfactory quality, then the student may be placed on probation.

A student must be continuously enrolled in the department while pursuing a Ph.D. If for some reason the student can not actively participate in course work or dissertation research, then

the student should seek a "leave of absence" from the Graduate College. As stated in the Graduate Catalogue,

“during the leave of absence, the student should remain in contact with the department. However, all degree requirements must be completed within the six- and/or eight year policy as stated in the Graduate Catalogue”.

Additional guidelines on Probation and Separation can be found in the Graduate Catalog (p. 42, 2007-2009 catalog).

**COLLEGE OF SCIENCES STATEMENT OF POLICY ON PLAGIARISM**  
**Recommendations of the Graduate Affairs Council**

Plagiarism is a very serious offense. Committing plagiarism may result in a student's expulsion from the university.

**Definition of Plagiarism**

To plagiarize is to steal and use (the ideas or writings of another) as one's own (American Heritage Dictionary, 1973:1001). There are many degrees of plagiarism -- e.g., wholesale verbatim use of paragraphs from published works without quotation marks, improper paraphrasing the structure and content of published work, to more subtle transgressions of statement of specific facts without references, acceptable only for common knowledge. Additionally, the more subtle forms of plagiarism may be specific to the norms of the discipline of study. Therefore, it follows that there are many levels of recourse that can be taken following an incident of plagiarism. Additionally, the severity of recourse is influenced by whether the student has a prior history of plagiarism.

**Plagiarism on the UNLV Campus**

Plagiarism is a form of academic dishonesty. According to NSHE code, Academic Policies of the UNLV Graduate Catalog, and UNLV Student Conduct Code, infractions of academic dishonesty are governed by Section 6 of the NSHE Code "Rules and Disciplinary Procedures for Members of the University Community". On the UNLV campus, the Vice President for Student Life is delegated the authority and responsibility to administer the Student Conduct Code, which supports Section 6 of above but is specific to student conduct. The faculty member who recognizes student plagiarism has the discretion to follow several courses of action including the issuing of a warning, a failing grade on the assignment, or a failing grade for the course. Alternatively, the faculty member may chose to initiate disciplinary review following the procedure outlined in the Student Conduct Code, which may result in a warning, probation, suspension, or expulsion for the student.

Toward the goal of maintaining an environment of academic integrity, community and pride in the College of Sciences, the following recommendations are made.

**Education and Practice of Academic Integrity: Department/School and Student Responsibilities**

Each Department/School in the College of Sciences is expected to inform incoming or new graduate students as to: (1) what constitutes plagiarism, (2) why plagiarism constitutes a breach of academic and scientific ethics and integrity and (3) what the ramifications are for plagiarism in an academic and scientific community and specifically at UNLV. This information may be disseminated in a mandatory first semester research/ethics course, seminar, or orientation

session. After receiving this information, graduate students are expected to maintain the highest levels of academic integrity while attending classes and conducting research at UNLV.

#### Response to Plagiarism: Department/School and Faculty Responsibilities

Each Department/School in the College of Sciences is expected to develop a set of procedures for faculty to follow that will allow (1) consistency but flexibility of action when a student is guilty of plagiarism and (2) tracking of incidents of plagiarism to help identify recurrence.

The College of Sciences recommends that the faculty member, upon the discovery of an incident of plagiarism and establishing guilt, should:

- (1) have a discussion with the student and student's Faculty Advisor regarding the plagiarism
- (2) copy the materials containing plagiarism and, following consultation with either the Chair or Graduate Coordinator, provide the materials to the Student Judicial Affairs officer, together with a memorandum justifying the accusation of plagiarism, and
- (3) proceed with a course of action commensurate with the level of plagiarism and any prior history, following discussion with the Graduate Coordinator and the Student Judicial Affairs Officer.

In all cases, the Student Judicial Affairs Officer should be consulted, and it is highly recommended that the student be required to meet with the officer. Involvement of the Student Judicial Affairs Officer does not remove the decision of a course of action from the Department/School, and allows tracking of recurrence without a prejudicial impact on the student. In some instances, a review by the student's standing Graduate Committee is necessary. It is recommended that an attempt be made to resolve the issue first by the Faculty Advisor and Graduate Coordinator. If this approach does not produce a satisfactory result, then the issue should be resolved by the student's Graduate Committee together with the Graduate Coordinator, and finally and if needed, by the Department/School faculty. The faculty may initiate disciplinary review in accordance with the Academic Policies of the UNLV Graduate Catalog, and "Rules and Disciplinary Procedures for Members of the University Community" of the NSHE Code. The student has the right to appeal the resulting decision following disciplinary review.