

Guidelines for M.S. and Ph.D. Degree Programs

Department of Geological Sciences and Engineering, Mackay School of Earth Sciences and Engineering University of Nevada, Reno

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I. Introduction

Welcome to the Department of Geological Sciences at the University of Nevada, Reno! We are glad you are here, and we hope you will have an enjoyable, stimulating, and rewarding stay in our department. We have outstanding faculty and excellent research facilities, all of which are at your disposal. This Guide will serve as an important reference for you while you obtain your graduate degree, complete classes, conduct research, and write a thesis or dissertation on some original research. This handbook will help you navigate through your graduate school experience.

It is important to realize that the successful and timely completion of a graduate degree is entirely dependent on YOU. No one else will take the classes for you, do your fieldwork, or write your thesis. Of course, the faculty are here to help you, and fellow students are often the most help of all, but it is up to you to become aware of all university and departmental requirements and deadlines that pertain to your degree program. You also need to make sure you are aware of department policies that may change from time to time.

Communication is the name of the game. At times, you will have to track down those busy faculty members on your advisory/examining committee to discuss what classes you should take and to schedule committee meetings. You will have to learn to be a bit of a personnel manager, as well as a knowledgeable practitioner of some discipline within the earth sciences. After you leave graduate school and begin a new job, decisions about your career advancement will be based on how you communicate with and relate to other people at least as much as on your technical competence. Use your time here in graduate school to practice, or acquire, these "people skills." You and your advisory/examining committee will be glad you did.

This Guide is intended as a supplement to the Graduate Student Association (GSA) Handbook, which details the policies of the UNR Graduate School. The GSA Handbook documents University standards for course work, thesis preparation, and publication. It presents, in detail, those steps necessary for successful completion of graduate studies at UNR. The UNR Graduate School is ultimately responsible for both admitting graduate students and approving the completion of their graduate programs. However, in some instances, the Graduate School defers certain decisions to individual Departments. This Guide is intended to codify the pertinent policies of the Department of Geological Sciences toward its graduate programs in Geology, Geological Engineering, and Geophysics. In addition, faculty in the Geological Sciences Department advise or work with students from interdisciplinary graduate programs, such as Hydrologic Sciences, Atmospheric Sciences, and Environmental Science and Health. All UNR interdisciplinary graduate degree programs have assigned Graduate Directors. Due to the interdisciplinary nature of these degree programs, policies and procedures may differ from those presented in this document. Information and guidance on policies and procedures for graduate students enrolled in these programs can be obtained from the interdisciplinary Graduate Directors. Much of the material summarized here regarding Graduate School requirements is drawn freely from the GSA Handbook, to which you are referred for more detail. A handy checklist in the

GSA Handbook illustrates the sequence of steps a student must follow to be awarded an advanced degree.

1.1 Program Description

Geology

- Masters of Science
 - Graduate students conduct research within the department and/or in association with the Center for Neotectonic Studies, the Ralph J. Roberts Center for Research in Economic Geology, the Desert Research Institute, the Nevada Bureau of Mines and Geology, and the United States Geological Survey-Reno Field Office.
 - Both regional and international research programs are available. Field-related studies and research are among the strengths of our programs. The University of Nevada, Reno is located near the boundary between the Great Basin and Sierra Nevada physiographic provinces, and is near many world-class localities for field studies, ranging from glaciated high country to high desert environments. Lake Tahoe and Yosemite, Great Basin, and Lassen Volcanic national parks are all within easy reach of Reno. We have state-of-the-art field instrumentation for geologic, seismic, gravity, magnetic, electrical, and rock properties studies. We also have one of the world's largest digitally recorded seismic networks.
- Non-Thesis Masters of Science
 - A non-thesis M.S. option is available as an appropriate alternative upon special petition. The non-thesis option is considered a terminal degree and is not recommended for students considering a future Doctoral degree. To pursue a non-thesis M.S., the student must first discuss this option with their advisor and committee. If the advisor and committee deem the non-thesis M.S. to be an appropriate option, the advisor will then submit a memo petitioning the Graduate Committee within the first semester.
- Doctor of Philosophy
 - The University's Ph.D. in geology invites students to explore earth-science research areas such as geodynamics, volcanology, geochemistry and petrology, earth and planetary surface processes, earthquakes and seismology, and mineral and energy resources—to name just a few.

Geological Engineering

- Masters of Science
 - The program is designed to enhance students' professional abilities in engineering and the geological sciences. Although often equated with geotechnical engineering, a discipline closely aligned with civil engineering, geological engineering is more correctly characterized as a program focused on geologic hazards mitigation and natural resources characterization.
 - The MS program emphasizes the professional nature of the geological engineering discipline. Consequently students are required to be excellent in both geology and engineering core subjects. Geological engineering plays a vital role in engineering with natural materials (rock, soil, water and even snow). Geological engineers are

unlike other engineers who use manmade materials like steel, concrete, asphalt and composites to design and construct. Geological engineers are intimately involved with our environment in assessing and design ways to alleviate the effects of geologic hazards like landslides, earthquakes, floods and volcanic eruptions or by mitigating or mediating potential man-made hazards including contaminated ground water and poorly sited landfills. They design foundations for structures, tunnels and open pits for large excavations. Geological engineers design facilities for mitigating the flow of groundwater pollution, for the location of sanitary municipal landfills and for the storage of hazardous waste.

- Non-Thesis Masters of Science
 - A non-thesis M.S. option is available as an appropriate alternative upon special petition. The non-thesis option is considered a terminal degree and is not recommended for students considering a future Doctoral degree. To pursue a non-thesis M.S., the student must first discuss this option with their advisor and committee. If the advisor and committee deem the non-thesis M.S. to be an appropriate option, the advisor will then submit a memo petitioning the Graduate Committee within the first semester.

Geophysics

- Masters of Science
 - Geophysics applies mathematical and physical principles to the study of the Earth and planets. The curriculum introduces the global properties of the Earth (gravity, magnetic field, crustal motions, interior dynamics) and the determination of near-surface and interior properties through the use of seismology, electromagnetics, potential fields, remote sensing, geodesy and GPS. The curriculum provides a broad grounding in physical and mathematical fundamentals useful for future graduate study or for work in energy, natural resource or engineering industries. Students will gain experience in the integrated application of geologic observations and geophysical measurements to the analysis of Earth science and related engineering problems using current, industry-standard computational and GIS tools.
- Non-Thesis Masters of Science
 - A non-thesis M.S. option is available as an appropriate alternative upon special petition. The non-thesis option is considered a terminal degree and is not recommended for students considering a future Doctoral degree. To pursue a non-thesis M.S., the student must first discuss this option with their advisor and committee. If the advisor and committee deem the non-thesis M.S. to be an appropriate option, the advisor will then submit a memo petitioning the Graduate Committee within the first semester.
- Doctor of Philosophy
 - The geophysics program prides itself on bringing traditional classroom subjects, such as mathematics and physics, into the great outdoors. Students in this Ph.D. program enjoy opportunities for study and research in the following fields: **Seismology**. The

program operates a major regional seismic network, and uses the data to examine causes and source physics of earthquakes. Subdisciplines of the program include: **Earthquake hazards.** The program studies and models strong earthquake ground motions from all over the world. **Geophysical exploration.** The program uses seismic, electrical and potential-field techniques to discover what is below the surface of the earth. **Remote sensing.** The program uses satellite data to study earth resources, crustal deformation, global change and explore the nature of other planets in this solar system. **Paleomagnetism.** The program uses the changing magnetic field of the earth, frozen on rocks and sediments, to learn how the earth has deformed over the past thousands—and even millions—of years. **Geodesy.** The program studies signals of active earth movement from local to global scales that arise from, for example, tectonics, the earthquake cycle, mountain building, natural and anthropogenic land subsidence, glacial isostatic adjustment, and loading from Earth's atmosphere and oceans.

1.2 Student Learning Outcomes

The student learning outcomes for all of the different graduate degrees include:

- To read and critically evaluate relevant scientific literature in the specific topic area of the advanced geology/geological engineering/geophysics sub discipline studied.
- To demonstrate an advanced level of competency and mastery in the specific topic area of his/her thesis.
- To discuss the relationship of the specialized area of geology/geological engineering/geophysics studied in his/her thesis in the broader context of the field and Earth Sciences in general.

II. Graduate Program Director

To assist graduate students in their degree programs, the Graduate Program Director is responsible for knowing what students are in the program, their status, and what their plans are with regard to completion of their degrees. The Director maintains a database to track each student, to assure that no one gets lost or waylaid. **The success of this task relies on communication; please let the Director know who you are when you arrive, and keep the Director abreast of any changes in your plans.**

The Graduate Program Director's job includes supplying information regarding policies and updates concerning the graduate program. Feel free to discuss any issues relating to our graduate programs with this individual. The Graduate Program Director will also enforce Graduate School and Departmental guidelines and deadlines. The Director will attempt to mediate any problems that may arise between students and advisory/examining committee members. ***The first resort of a student in difficulty with the committee and/or advisor is the Graduate Program Director. Unresolved matters are referred to the Department Chair, and if appropriate, the Graduate School for action.***

Graduate Director: Dr. Stacia Gordon, staciag@unr.edu, phone: 775-784-6476

III. General University and Departmental Requirements for an Advanced Degree at UNR

Graduate students enrolled in both the M.S. or Ph.D. programs in the Department of Geological Sciences are obliged to comply with the requirements of both the Graduate School and the Department. As in most other universities, it is the sole responsibility of the *student* to become aware of all policies, procedures, and deadlines appropriate to their degree program. All graduate students need both to consult their advisors and to check the latest updates on policies. A visit to the Graduate School in the Student Services Building in the first semester of graduate work is strongly recommended to secure copies of the GSA Handbook and all forms that will eventually be needed by the student. It is best to plan ahead and meet often with your Advisor to ensure that all are aware of timing and procedures.

Annual Registration

The UNR Graduate School requires that *students must register for at least three credit hours each semester* or obtain a written leave of absence approved by the student's advisor and the Department chair. Please note that unless these approved leaves are in the Graduate School's records (that is, recorded on the Program of Study), extensions of the 6- and 8-year requirements for M.S. and Ph.D. degrees will not be approved by the Graduate Dean.

Major Advisor and Committee

An approved application for graduate standing lists the name of the student's temporary Advisor. Usually the temporary Advisor becomes the student's permanent Advisor through the completion of Program of Study paperwork (Graduate School form) during the first committee meeting. The student also selects members of the Advisory-Examining Committee, who are recorded on and sign the Program of Study. The Program of Study is then formally approved by the Graduate Director and then the Graduate Dean. All committee members are involved in the determination of appropriate coursework and approval of the thesis or dissertation proposal. They also help design and administer the relevant examinations and eventually approve the final thesis or dissertation.

- [Declaration of Advisor/Major Advisor/Committee Chair form](#)¹
 - For master's students, the completed form must be submitted to Graduate School by the end of the student's second semester
 - For doctoral and MFA students, the completed form must be submitted to Graduate School by the end of the student's third semester

Advisor

When you arrive as a new graduate student in Geological Sciences, you will be assigned a temporary Advisor, who will help you get started, and who will likely become your research Advisor. Your temporary advisor in most cases selected you from the applicant pool as a promising student. We strongly encourage new students to select a general research area and a permanent Advisor sometime during the *first* semester of residence, and the full

¹ <https://www.unr.edu/Documents/graduate-school/Declaration-of-Advisor.pdf>

advisory/examining committee before the end of the *second* semester. Your thesis or dissertation Advisor will help you: 1) plan your course schedule, 2) identify a research project, 3) seek funding, and 4) find office or desk space.

You are free to change Advisors or committee members *at any time* during your graduate work. However, if you decide to change Advisors, some discussion with your present Advisor is essential, especially if you have received grant support from that Advisor. You may have an obligation to provide your present Advisor with data, reports, or other information related to research for which you received funding. If you already have a permanent Advisor and Advisory/Examining committee, a change can be made by submitting a written agreement signed by the student, former Advisor or committee member, new Advisor or committee member, and Department Chair. ***The Graduate School must also be notified of this change, using their Change of Advisory Committee form.***

Advisory/Examining Committee composition:

The Advisory/Examining committee needs to be formed in time for the first committee meeting convened before the end of the 2nd semester. This committee provides guidance during graduate research.

For the M.S. degree, this committee is composed of 3 or more faculty members:

- the principal Advisor (a.k.a. Committee Chair, thesis advisor, or major advisor),
- an additional member from the degree program Graduate Faculty list
- Graduate School Representative who is outside of your department and degree program

Doctoral committees require at 5 or more members:

- the principal Advisor
- 2 additional members from the degree program Graduate Faculty list
- 1 faculty member from outside of DGSE that serves as the Graduate School Representative
- 1 additional committee member which may be from inside or outside of DGSE.

The committee members provide additional counseling and expertise beyond that of the thesis advisor, maintain standards, and can help with problems that may arise. A list of all UNR Graduate Faculty may be found on the Graduate School web site, and a search bar allows you to call up those in a specific degree program, if needed.

Both M.S. and Ph.D. committee meetings should be arranged by the student, and should take place a minimum of once each year. Students should be in contact with committee members on a semester basis to keep them apprised of their progress. The role of the Graduate School Representative is to provide an objective external perspective and to assure that Graduate School policies are being followed. The role of the Advisory-Examining Committee in graduate examinations is described later.

Program of Study

Advanced degrees are conferred by the university following approval of the graduate faculty, the graduate dean, and completion of an approved Program of Study. The [Program of Study form](http://www.unr.edu/Documents/graduate-school/program-of-study.pdf)²

² <http://www.unr.edu/Documents/graduate-school/program-of-study.pdf>

(Graduate School Form) documents the members of the Advisory-Examining Committee, coursework, and research the student has chosen for his/her advanced degree work.

Development of a Program of Study is an important component of the graduate program in the Department of Geological Sciences. The Program of Study, as implemented in this Department, serves a variety of purposes: (1) it defines the classes and the Advisory-Examining Committee; (2) it is produced sufficiently early in the student's stay in our Department to guide the student and to remind the faculty of student needs; (3) it enables students to take charge of their graduate program. The graduate student is free to choose his/her research direction or area of specialization, Advisor, and committee members, but the experience of these faculty members is crucial to judicious selection of appropriate coursework and thesis topics.

The Program of Study should be approved by the Department of Geological Sciences and then turned into the Graduate School by the end of the 2nd semester for MS students and by the end of the 2nd year for PhD students. Typically, the Program of Study form is presented and signed at the committee meeting during the comprehensive exam meetings (end of the 2nd semester for M.S. students and the end of the 4th semester for Ph.D. students).

Changes to the Program of Study

Once the Program of Study is filed with the Graduate school, the student is obligated to take all of the courses listed in the program. Any changes must be made by filing a Change in Program of Study (Graduate School form).

M.S. Thesis Proposal

The Department of Geological Sciences requires that a draft thesis proposal be submitted to the Advisory/Examining committee as part of the Program of Study Package at the first committee meeting by the end of the second semester. This draft should be circulated to the committee a few weeks in advance of the committee meeting. Copies of the draft thesis proposal go only to the committee and are not submitted to the graduate school. The final thesis proposal is usually produced shortly after the first committee meeting, taking into account any suggestions made during that meeting, before their first field season starts.

Dissertation Proposal

For Ph.D. students, the initial draft proposal presented at the first committee meeting is a short 2-page summary (see Qualifying examination instructions below). The final draft of their dissertation proposal is modeled after a NSF research grant proposals in length and style (see Comprehensive examination instructions below).

Foreign Language

The Department of Geological Sciences has no foreign language requirement for the Ph.D. degree.

IV. Departmental Requirements for a M.S. Degree

Thesis Option

This section summarizes the standards for the M.S. degree with thesis option. The Department of Geological Sciences does not normally offer the M.S. non-thesis option (see next section). It is important to understand that earning a graduate degree involves much more than just completing a fixed number of graduate classes. The student's Advisory/Examining Committee may require the student to take additional courses if, in its opinion, training or background is needed to reach the degree of proficiency typical of others holding this degree in the student's chosen field of specialization. The number of classes required by the Graduate School is really a minimum, because the amount of preparation a student needs for thesis research varies considerably across departments and specialties.

Course Work -31 cr of graduate courses, including:

- GEOL 795 Comprehensive exam (1 credit, taken second semester for all M.S. programs)
- 24 credits of coursework (at least 12 credits at the 700 level); 3 of these 24 credits must be GEOL 790 (1 credit)
- 6 cr of thesis (GEOL 797)

Course selection will be determined in conjunction with your advisor, committee, and the program graduate director. Examples of possible courses include:

GE 684 – Groundwater Hydrology (3 credits)

GPH 655 – Geophysics and Geodynamics (4 credits)

GEOL 671 – Ore Deposits (3 credits)

GEOL 720 – Modern Analytical Techniques in Earth Sciences (3 credits)

GEOL 723 – Chemistry and Physics of Magmas (3 credits)

GEOL 733 – Petrotectonics (3 credits)

GEOL 737 – Neotectonics and Quaternary Mapping (3 credits)

GEOL 738 – Quaternary Field Exercises (3 credits)

GEOL 755 – Basin Analysis (3 credits)

GEOL 767 – Advanced Optical and Infrared Remote Sensing (3 credits)

GEOL 780 – Isotope Hydrology (3 credits)

GEOL 784 – Vadose Zone Hydrology (3 credits)

Many students will therefore take three semesters of GEOL 790 (3 credits), three or four 700-level courses (9-12 cr), three or four 600-level courses (9-12 Credits), one credit of GEOL 795 and 6 cr of thesis to satisfy these requirements.

A minimum of 31 credits of acceptable graduate courses (grade of C or better and listed on the Program of Study) must be completed. A maximum of 9 credits completed elsewhere (Grade B or better) can be transferred and applied to the M.S. degree at UNR. Eighteen of the 24 credits must be in the major field of study. The overall grade point average for graduate classwork must be maintained above 3.0. If you fall below 3.0, you will be placed on academic probation, and allowed one semester to bring your grades up to 3.0 or above. Failure to meet this standard will result in your being dismissed from the program. See Program of Study Requirements (PDF on graduate school web site) for additional details about requirements.

The Graduate Seminar (**GEOL 790**) is *required* of all students entering MS. and Ph.D. programs in Geology, Geophysics, and the M.S. in Geologic Engineering. Master's students must enroll a minimum of 3 semesters. Graduate seminar is a forum for faculty and students from UNR and other organizations to present information on cutting edge topics in the geological sciences. The seminar schedule varies each semester.

M.S. Examinations

Two examinations are required for the M.S. degree.

1. **Comprehensive examination.** In their second semester, MS students will be required to sign up for one credit of MS Comps (GEOL 795), under the direction of the Graduate Director. The MS Comp Exam consists of two requirements: 1) a formal thesis proposal including a presentation of the proposed research; and 2) approval of your Program of Study. Students are required to submit a formal thesis proposal to their committee and have a committee meeting to discuss both the proposal and their proposed Program of Study prior to the end of their second semester in residence (does not include summer semester). Both must be approved by their committee and forwarded to the Graduate Director to enable the Director to provide a grade (S/U) for the student. **Failure to complete this requirement in the allotted time will result in the student being dropped from the program.** Under extenuating circumstances, the student may petition for an extension, but any petition must be approved by their thesis committee before it will be considered by the Graduate Director.
2. **Final oral examination.** A final Oral Examination (Thesis defense, announced two weeks in advance and open to the public including a public presentation) is held with the Advisory-Examining Committee to evaluate the quality and professional standards of the student's research. After successfully completing this examination and approval of the final draft of the thesis, the student is advanced to Master's candidacy and may apply for graduation. The thesis defense is usually about 2 hours long and consists of a public talk (~30 – 45 min) followed by a closed session with the committee where questions are asked and specific recommendations/revisions are suggested for the thesis. The thesis should be scheduled in a venue that can sufficiently accommodate the audience (usually 30 or more people).

Time Limits

All requirements for this degree must be completed within six calendar years preceding conferral of the degree.

Non-Thesis Option

A non-thesis M.S. option is available as an appropriate alternative upon special petition. The non-thesis option is considered a terminal degree and is not recommended for students considering a future Doctoral degree. To pursue a non-thesis M.S., the student must first discuss this option with their advisor and committee. If the advisor and committee deem the non-thesis M.S. to be an appropriate option, the advisor will then submit a memo petitioning the Graduate Committee within the first semester.

For the non-thesis M.S., a minimum of 30 course credits is required with at least 15 credits at the 700-level. In addition to the course work, a Professional Paper (2 credits of GE 796 or equivalent Professional Paper credits) is required. The Professional Paper will demonstrate the student's ability to integrate technical state-of-the-art knowledge into a document suitable for professional review and publication. Topics may be of an applied nature and must be approved by the student's Graduate Committee. Format and content of the Professional Paper should be commensurate with those found in professional society proceedings, regional/national symposia and conferences, applied science and resource management journals, and other journals serving as a forum for scientific discussion. The student must also meet with their committee by the end of their 2nd semester. During this meeting, the student will provide a draft summary of what will be included within the Professional Paper. This summary should be circulated to the committee a few weeks in advance of the committee meeting.

V. Departmental Requirements for the Ph.D. Degree

This section summarizes the standards for the Ph.D. degree. This degree signifies completion of a substantial body of work by the student that displays distinction, original scholarship, and superior achievement.

Residency

Six semesters of graduate study are required. Two consecutive semesters (Fall and Spring, or Spring and Fall), must be spent at UNR in full-time study (minimum of nine credits per semester). The university residency requirement must be met before a student is allowed to advance to candidacy.

Course Work - 73 cr of graduate credits including:

- 48 credits of coursework, (at least 30 credits at the 700 level); 5 of these 48 credits must be GEOL 790 (1 credit)
- 1 credit graduate comprehensive exam (GEOL 795)
- 24 dissertation credits (GEOL 799)

Course selection will be determined in conjunction with your advisor, committee, and the program graduate director. Examples of possible courses include:

GE 684 – Groundwater Hydrology (3 credits)

GPH 655 – Geophysics and Geodynamics (4 credits)

GEOL 671 – Ore Deposits (3 credits)

GEOL 720 – Modern Analytical Techniques in Earth Sciences (3 credits)

GEOL 723 – Chemistry and Physics of Magmas (3 credits)

GEOL 733 – Petrotectonics (3 credits)

GEOL 737 – Neotectonics and Quaternary Mapping (3 credits)

GEOL 738 – Quaternary Field Exercises (3 credits)

GEOL 755 – Basin Analysis (3 credits)

GEOL 767 – Advanced Optical and Infrared Remote Sensing (3 credits)

GEOL 780 – Isotope Hydrology (3 credits)

GEOL 784 – Vadose Zone Hydrology (3 credits)

A minimum of 73 graduate credits is required for a Ph.D., of which at least 48 credits must be in course work. With the approval of the Advisory-Examining Committee and Departmental Chair, up to 24 credits (Grade B or better) can be transferred from other graduate work and applied to the UNR Ph.D. program. At least 30 credits of formal course work must be in 700 level classes. One credit of 795 (Comprehensive) must be taken. At least 24 credits should be in dissertation research. Any exceptions to these requirements must be approved by the Advisory/Examining Committee, Department Chair, and Graduate Dean. See Program of Study Requirements (PDF on graduate school web site) for additional details about requirements.

The Graduate Seminar (**GEOL 790**) is *required* of all students entering MS. and Ph.D. programs in Geology, Geophysics, and the M.S. in Geologic Engineering. Doctoral students must enroll in a minimum of 5 semesters. Graduate seminar is a forum for faculty and students from UNR and other organizations to present information on cutting edge topics in the geological sciences. The seminar schedule varies each semester.

Advisory/Examining Committee:

The committee is very important in guiding the student's progress toward an advanced degree, and high priority should be placed on forming the committee early in the graduate program (e.g., the first year). For a student entering a Ph.D. program with a Bachelor's degree, the committee should be formed prior to the completion of 24 credits of graduate work (usually during the 2nd or 3rd semester). For students with a Master's degree, the committee should be formed by the end of the second semester. The committee is also charged with approving the student's Program of Study.

Examinations

The Department of Geological Sciences and Engineering and the university as a whole require three examinations for a Ph.D. degree:

1. Qualifying Examination

The exam includes both oral and written sections. The goal of this exam is to assess the student's geoscience background knowledge and the student's progress toward defining a thesis topic and plan of study.

Scheduling:

The student must meet with their dissertation committee and complete the qualifying exam by the end of their second semester.

Procedure:

Two weeks prior to the meeting with their dissertation committee, the student will submit to the committee 2 different two-page, single-spaced written documents. One will summarize their proposed dissertation research. The second is a mini proposal on any research topic other than that included within their dissertation research. The goal of the second proposal is to determine the student's ability to formulate and test research questions independent of their advisor. Figures and references are not counted toward the 2-page limit for either document. During the meeting, the student's committee will assess the student's general knowledge of geology and research topics surrounding his/her proposed dissertation to determine if the student has the necessary skill set and knowledge to proceed with a Ph.D. The examination will consist of 1) the student giving two ~15 minute presentations, one on their written thesis plan and the other on their 2nd proposal; and 2) 1-2 hour oral questioning on the research plan and on fundamental concepts in geosciences that would be expected for a doctoral candidate at the end of their first year. Several geoscience sub-disciplines may have more specific requirements for the structure and content of this exam, and students should check with the coordinators of those programs for more information. The committee will report either "pass", "conditional pass" or "fail" based on a simple majority vote in writing to the Graduate Program Director. In the case of "Pass", the student may continue in the doctoral program. In the case of "Conditional Pass", the committee will provide suggestions for additional coursework or studies that should be undertaken during the student's progress toward the doctoral degree. These recommendations shall be used by the advisor and the student to help define the student's Program of Study. The Program of Study is to be submitted to the Graduate School by the end of the 4th semester. With an outcome of "fail", the student will not be

allowed to continue in the department's doctoral program, but may be eligible to complete the requirements of a Master's degree.

2. Comprehensive Examination

The exam includes both oral and written sections. The purpose of the written and oral examinations is to assess the candidate's accumulated background in geoscience and progress toward conducting original and independent research. The written portion of the exam will consist of preparation of a full thesis proposal and, at the discretion of the advisor and committee, a suite of closed book exams to assess the student's comprehension of specific disciplines related to the proposed research. The oral exam will consist of an oral presentation of the research proposal by the candidate followed by questions from the dissertation committee directed toward clarification of issues in both the thesis proposal and closed book exams in addition to general questions of a wide variety of geoscience themes. If this examination is passed, the student is advanced to candidacy for the Ph.D. degree. Students sign up for 1 credit of GEOL 795 the semester they take their exam.

Scheduling:

The student must schedule and complete the written and oral comprehensive exams by the end of their fourth (if the student already has an M.S. degree) or fifth semester (if the student does not already have an M.S. degree). The written exam needs to be given to the committee in a timeline that allows for the student to also complete their oral exam within the same semester. Any request to deviate from this timeline must be presented in the form of a petition (email) to the Director of Graduate Studies no later than the end of the semester before the written exam was required to be taken. Significant delays in this schedule will not be accommodated except in extenuating circumstance. **Failure to complete the comprehensive examination in this timeline will result in the student being dropped from the program.**

Written Examination:

Procedure:

The research proposal will outline the background, methodology, any preliminary results, and anticipated implications of the proposed research. The student's research must be presented in terms of how it is relevant to a broader geoscience community; what is the broader importance of the research? The department insists that the proposed research exhibit originality and that the candidate display a full command of the questions and logistics that will need to be addressed during the course of the proposed research problem. The format of the proposal should conform to the standard suggested by a suitable funding agency (e.g., NSF, NASA, DOD, USGS or DOE). For example, it should be a maximum of 15-pages and single-spaced, including figures. It should have a one-page summary page that includes 2 sections: Overview and Intellectual Merit. The proposal must also have a list of references cited. The summary and references are not counted towards the 15-page limit. A hard-copy example is available from the Graduate Director. It is also *strongly suggested* that the student distribute the one-page summary of the research proposal to faculty and graduate students in DGSE, NSL, and NBMG in order to enhance communication and provide a feedback mechanism to the student. The student shall deliver the research proposal to each committee member at least four weeks prior to the oral exam.

In addition to writing of the research proposal, the student can be required by the dissertation committee to sit for timed, closed book exams to assess the student's comprehension of specific disciplines related to the proposed research. The closed-book exams will be taken at the same time that the proposal is submitted to the dissertation committee. The exams will be graded on a pass-fail basis.

Within three weeks of receiving the proposal and, if required, after the student has taken the closed-book examination, the committee will vote on whether the student has passed the written exam. If the committee decides the proposal does not pass in quality and/or content to proceed to the oral examination and/or if the student did not pass the closed-book exam, the committee will provide guidelines of how the proposal should be re-written and/or a new closed-book exam will be administered. The student will be informed in person by their advisor whether they have passed and/or whether they need to make revisions/take a new closed-book exam. The student will then be given two weeks to complete these changes before moving onto the orals. If the committee still deems the proposal to be in poor shape after revision and/or the student to have failed the closed-book exam, the student will fail the overall comprehensive exam.

Oral Examination:

Procedure:

The general goal of the oral examination is to provide an opportunity for the dissertation committee to evaluate the student's general knowledge base and understanding of research methods, and the significance and feasibility of the proposed research to advancing knowledge in the Earth Sciences. The exam consists of a formal, 20–30 minute presentation of the thesis proposal by the student. The presentation is followed by ~1–2 hours of questions from the committee. Questions may range from those directly related to the thesis proposal and presentation to general geoscience knowledge relevant to the student's field of study. The committee determines if the candidate (1) has sufficient ability and comprehensive knowledge to conduct the research, (2) has sufficiently reviewed the literature, (3) has proposed research which has a reasonable scope and which should produce an original and acceptable research contribution; and (4) has a general grasp of geoscience knowledge.

For the overall comprehensive exam, the committee shall (1) unconditionally approve the proposed research, (2) approve the proposed research with revisions, (3) reject the proposed research with specific reasons given and recommendations made, or (4) terminate the student from the Ph.D. program. Results 1 and 2 constitute passage; results 3 and 4 constitute failure. Following outcome 3, a reexamination may be held in accordance with Graduate School provisions.

Results of the Comprehensive Examination

Once the student has passed the written and oral exams, the student must submit an Admission to Candidacy Form, which is available from the Graduate School. The student's advisory committee, Director of Graduate Studies of the program, and the Graduate Dean must approve the form.

3. Final Oral Examination

The final oral examination (i.e., thesis defense) must be announced two weeks in advance and open to the public. The exam is held with the Advisory-Examining Committee to evaluate the quality and professional standards of the student's research. The defense is usually ~2–3 hours long and consists of a public talk (~45 min), with general questions from the audience, followed by a closed session with the committee where questions are asked and specific recommendations/revisions are suggested for the dissertation. The exam should be scheduled by the student in a venue that can sufficiently accommodate the audience (usually 30 or more people).

Specific guidelines from the Graduate School regarding examination procedure:

The Department and the Advisory-Examining Committee are responsible for the format of the exam, and for its execution and results. The exam must be both oral and written, and must test the student's mastery of a broad range of knowledge, and not merely the course work that has been completed. The student fails the exam if more than one negative vote is cast by members of the Advisory/Examining Committee. The exam may be retaken once, if additional study is approved by the Advisory-Examining Committee. The Advisory-Examining Committee determines the period of additional study. The Advisory-Examining Committee is the official examining committee for both written and oral examinations. External examiners may be added or deleted only with prior consent of the Advisory-Examining Committee. The specific role of any external examiner is to be determined in advance of the exam by the Advisory-Examining Committee.

The major advisor is the chair of the Advisory-Examining Committee, and is responsible for:

- ensuring that the Graduate School Guidelines are followed.
- ensuring that Departmental Guidelines are followed.
- ensuring that the format and procedures for the examination that have been approved by the Advisory-Examining Committee are followed.
- keeping committee members and the student informed at each stage of the process.

Dissertation

The preceding steps help make sure you are prepared for the research and writing of a dissertation. The dissertation must represent original and independent research of high quality and should reflect a mastery of research techniques and literature. The dissertation documents the ability of a student to select an important problem to be investigated, to study it competently, and to express the results in a comprehensible manner.

According to Graduate School regulations, the format of the dissertation can vary in that the student may elect either the "dissertation" or "publication" option. The Graduate School standards for organization, scope, and content of the dissertation are the same regardless of the choice of option. The publication option carries additional constraints including a *prior written document* listing responsibilities for revisions and follow-up to be signed by both the student and faculty members (co-authors) involved. For the publication option, the Graduate School does not require acceptance and publication of manuscripts submitted to journals as prerequisites to successful completion of the dissertation.

Publication of one's dissertation prior to its approval by the committee does not in any way imply that it will be approved by the student's committee; publication and dissertation approval are separate processes.

Time Limits

All requirements for the Ph.D. degree, exclusive of prior M.S. work, must be completed within eight (8) calendar years.

VI. Graduate School Requirements

Graduate School Academic Requirements:

All graduate students must maintain a cumulative graduate GPA of 3.0. If their GPA drops below 3.0, they are either placed on probation or dismissed. Undergraduate courses will not count towards graduate GPA.

Probation

Students whose cumulative graduate GPA falls between 2.31 and 2.99 are automatically placed on academic probation for one semester. If they fail to raise their cumulative GPA to 3.0 by the end of one semester, they are dismissed from their graduate program. Thesis, dissertation, S/U graded credits, and transfer credits have no impact on a student's GPA.

Dismissal

Students whose cumulative graduate GPA is 2.30 or lower are dismissed. Dismissed students are no longer enrolled in their graduate program but may take graduate-level courses as a Grad Special. Dismissed students wishing to complete their degree must obtain approval to take graduate-level courses, raise their graduate GPA to at least 3.0, and then re-apply to their graduate program. Any courses taken in an effort to raise their GPA will be included in the graduate special/ transfer credit limitation (9 credits for master's degrees).

Please refer to Nevada System of Higher Education CODE on Student Program Dismissal Procedures (SPDP) and review conference policies: (NSHE CODE, Chapter 11, Sections 1-3). If program dismissal is based upon failure to maintain required grades or a required GPA as described above, SPDP does not apply and the student may be summarily dismissed from the graduate program.

Transfer Credits

These are credits transferred from another institution. Credits completed at UNR in another program or as a graduate special do not need to be transferred. Transfer credit can be requested on the [Graduate Credit Transfer Evaluation Request form](#)³ available on Graduate School website, and must be signed by the student, major advisor, and graduate director. Transfer credits applied to a master's program must comply with the time limitation on master's work (6 years). Thus, if a student took a course five years prior to admission, they would have to complete the degree within one year for the course to apply to the degree. Credits from a completed master's degree will be exempt from the 8-year time limitation for those students pursuing a doctoral degree.

Graduate Assistantships

Graduate Teaching assistantships (GTA) are responsible for assisting with classes and/or leading laboratories associated with classes at a commitment of 20 hours per week. The number of GTAs available every semester are determined by funding available to the Chair of DGSE and the number of graduate students that have completed their degree that were on a GTA. The assistantships have a stipend with a fixed salary of \$1600 for MS students or \$1900 for PhD students per month for the ten academic months (Aug 1 to May 30), waiver of any non-resident fees, paid student health insurance, a Grant-in-Aid Tuition credit for between 6 and 9 credits, that reduces your personal liability to ~\$68 per credit per semester. The student is responsible for payment of any other student fees such as Health Center, Counseling and other fees totaling between \$200 and \$250 per semester.

Graduate Research assistantships (GRA) are negotiated between the student and a faculty member. They are also at a commitment of 20 hours per week. The faculty member funding the research assistantship will determine the stipend but it will be no less than that set by the university

³ <http://www.unr.edu/Documents/graduate-school/GraduateCreditTransferEvaluationRequest.pdf>

for the teaching assistantships (\$1600 for MS students or \$1900 for PhD students). The assistantship also consists of a waiver of any non-resident fees, paid student health insurance, a Grant-in-Aid Tuition credit for between 6 and 9 credits, that reduces your personal liability to ~\$68 per credit per semester. The student is responsible for payment of any other student fees such as Health Center, Counseling and other fees totaling between \$200 and \$250 per semester.

All graduate students holding an assistantship (teaching GTA or GRA) are considered Nevada residents for tuition purposes. Non-resident tuition is only waived for the duration of the assistantship. To be eligible for an assistantship, students must be admitted to a degree-granting program and be in good academic standing. The student must have an overall GPA of at least 3.0 and must be continuously enrolled in at least 6 graduate level credits (600-700) throughout the duration of the assistantship.

GTAs and GRAs for incoming, new students are determined at the time the student is accepted into the program. If a student would like to request a state-funded GTA or GRA later in their career, they are advised to email the Chair of the Department as soon as possible to make the request. This does not guarantee the request will be granted.

Graduate School: [General information](#)⁴ and the [Graduate Assistantship handbook](#)⁵.

Leave of Absence

Continuous Enrollment:

To maintain “good standing” all graduate students are required to enroll in a minimum of three (3) graduate credits each fall and spring semester until they graduate. International students may be required to enroll in nine graduate credits each fall and spring semester depending on the requirements of their visa. All students holding assistantships (whether teaching or research assistantships) are required to enroll in a minimum of six (6) graduate credits each semester they hold the assistantship.

Leave of Absence

Students in good standing may request a leave of absence by completing a [Leave of Absence form](#)⁶ during which time they are not required to maintain continuous registration. Usually, a leave of absence is approved for one or two semesters. The leave of absence request may be extended by the student filing an additional leave of absence form. Students applying for a leave of absence should not have any “incomplete” grades which could be changed to “F” and have a detrimental impact on their cumulative GPA. Requests for leave of absences must be received by the Graduate School no later than the last day of enrollment for the semester the leave is to begin.

Reinstatement

When a student has been absent for one semester or more without an approved leave of absence, he or she may request reinstatement via the [Reinstatement form](#)⁷. This form allows the program the option to recommend the student be re-admitted to their graduate program based on their previous admission OR require the student to re-apply for admission which would require students to submit a new application for admission and pay the application fee. The Notice of Reinstatement to Graduate

⁴ <http://www.unr.edu/grad/funding/graduate-assistantships>

⁵ http://www.unr.edu/Documents/administration-finance/hr/hr-graduate/GA_handbook.pdf

⁶ https://www.unr.edu/Documents/graduate-school/leaveofabsencer_9.23-1.pdf

⁷ <https://www.unr.edu/Documents/graduate-school/Notice-of-Reinstatement-Graduate-Standing.pdf>

Standing must be received by the Graduate School no later than the last day of enrollment for the semester the reinstatement is to begin.

Health Insurance

All domestic degree seeking graduate students, who are enrolled in six or more credits (regardless of the course level) in a semester, will be automatically enrolled and billed for the University sponsored health insurance for each term they are eligible (fall & spring/summer). If a student has other comparable coverage and would like to waive out of the student health insurance, it is the student's responsibility to complete the [University online waiver form](#)⁸ prior to the deadline. If approved, a health insurance waiver is good for the current academic year only. A new waiver must be submitted each academic year. All international graduate students are required to carry student health insurance, and the cost will be automatically added to your student account. Any international graduate students with insurance questions must contact the [Office of International Students and Scholars \(OISS\)](#)⁹ directly.

[Information on Graduate health insurance](#)¹⁰.

VII. Theses and Dissertations

The Department of Geological Sciences has several important policies regarding theses and dissertations.

First, the existing Graduate School regulations regarding the format, scope, and organization of the thesis or dissertation are the same (!) regardless of whether the student chooses the “dissertation” or “publication” option. Departmental policy on theses and dissertations in addition specifies that all figures, tables, and captions must be interleaved or embedded within text where first cited, as in published journal articles. Use and follow the guidelines of a refereed journal in your field for headings, citations, figures and captions, and references cited.

Second, the student's Advisor is ultimately responsible for the research quality, since his/her signature is required on the title page of the thesis or dissertation for the student to be awarded the degree. This responsibility resides with the Advisor regardless of any previous or pending publications by the student. This means that publication by itself is not considered by anyone to be a substitute for approval of the thesis or dissertation by the Advisory-Examining Committee. Published papers submitted to fulfill thesis or dissertation requirements may require extensive revision before acceptance by the advisor and committee.

Third, if a student chooses the “publication option”, the student and advisor will discuss in advance what publications will be submitted by the student. These publications can be derived from, say, chapters of the dissertation, and formatted for the appropriate journals. This approach enables the research to be organized in modules, but it also is expected that the publications will be tied together into a coherent whole, which is the main rationale for writing an extended work such as a thesis or dissertation. Note that the Graduate School stipulates that actual publication is not a requirement. Most faculty have a general policy regarding publication with students (who will be first author, etc.) Ask about this early in the process.

⁸ <https://studentinsurance.usi.com/UNR/unr-grad>

⁹ <https://www.unr.edu/oiss>

¹⁰ <http://www.unr.edu/grad/health-insurance>

General comments regarding publication

Publication of the significant results of thesis or dissertation research is an important aspect of graduate education, but its role and emphasis can vary between programs. Normally, the M.S. thesis is considered to be sufficient evidence of competence at the Master's level. However, it is often to the student's advantage in the job market to publish part of the thesis. For example, employment prospects and future advancement may be enhanced for new hires in the petroleum industry who publish in *AAPG Bulletin*, or for minerals exploration geologists to publish in *Economic Geology*. The Department of Geological Sciences encourages, but does not mandate, publication of the M.S. thesis. However, individual faculty advisors may add to this recommendation as long as this is clearly understood and agreed to by the student and specified in the Program of Study.

Research at the Ph.D. level should lead to publications in refereed scholarly journals. By definition, this work involves new methods, collection of new data, formulation of new analyses, or perhaps construction of new syntheses that advance the state-of-the-art in a particular field. Publication by the student can be very important at this stage of his/her career.

In practice, however, it may be unrealistic or impossible to predict whether or what parts of the thesis or dissertation can or should be published. Only as the work nears completion does this usually become apparent. The student should not hesitate to negotiate how publication should be carried out (who is to be first author, where it will be published, etc.) early on. In certain cases, a student's work may be an integral part of the Advisor's research and publications. To ensure that authorship and credit issues are resolved fairly, the student should discuss these issues with the Advisor and committee members. Failing resolution at that level, students should meet with the Graduate Program Director or Department Chair.

General comments about rough drafts of the thesis or dissertation

The end product of your graduate degree in Geological Sciences is your thesis or dissertation. That document is a record of your research methods and results, and should be carefully crafted. Others will probably use your work in years to follow, so it makes sense to understand what is expected in the final form of the thesis or dissertation.

Nobody writes a perfect and acceptable thesis on the first try. The number of drafts you will need depends on a many factors, including (a) how good a writer you are; (b) how extensively you, your advisor, and your committee have interacted during the course of your research; and (c) the complexity of your research project. It is never possible, or even desirable, to predict the number of drafts needed. However, to minimize the amount of rewriting you will have to do, it is extremely important that you **communicate** with your Advisor and committee during your thesis research, not just at the very end, a few days or weeks before you would like to defend and start a new career.

Before you actually start the writing, get together with your Advisor and discuss your thesis. Does he/she think you are ready to begin writing? If so, present a detailed outline and ask for comments. Once your Advisor has given approval for you to start writing, do the same thing with your committee members. Don't forget that they can also have useful things to impart to you, and that they will eventually be called upon to sign your thesis. See USGS Suggestions to Authors for excellent advice about writing style, expression, and grammatical pitfalls, before you present your first draft to your Advisor.

Many students find it easiest to submit early drafts to their Advisor in small, manageable chunks. That way, they can find out early whether major problems exist. Depending on the Advisor, the student should consider progressing to a second or third draft before submitting the thesis to the rest of the committee. The committee members will appreciate a clean, better-

written draft, and will have a better chance of evaluating the science. Most Advisors will insist on this strategy.

You must get input from your Advisory-Examining Committee before you try to defend your thesis or dissertation. Be patient, but ask for their comments on your draft within a reasonable amount of time (say, one month), remembering that a rough draft exceeding 100 pages will usually require a lot of editing for both style and scientific accuracy. Don't be discouraged by all the red ink on your masterpiece. There may even be requests for some additional lab or fieldwork. Demands for additional work signal that (1) you and your committee have not been communicating effectively about expectations, or (2) you or your committee are not adhering to the Program of Study. Your Advisor and the Advisory-Examining Committee are the "quality control" on theses and dissertations, but you should keep in mind the bounds on your project that were agreed to in your Program of Study. If you think that your committee is being unfair or autocratic, discuss this with your advisor (if you can) or the Graduate Program Director.

Plan on at least several months (3 or more) just for the writing of your M.S. thesis; additional time is then needed for the reviews of your drafts and rewriting. Thus, for a May graduation, an M.S. student should be well into writing by September of the previous year. For the Ph.D., eight months to a year of full-time writing are commonly necessary to produce the first draft or two. You can streamline this effort by planning ahead and discussing each aspect of your research with your Advisor and committee members. If you've followed the process correctly, there should be very few surprises to you or to them during the writing phase of your graduate education. Your ultimate aim is to defend your thesis and at that point have to make only minor changes, if any, to your last draft.

Thesis Credits:

Per graduate school policy, all thesis credits must be taken as S/U, Satisfactory/Unsatisfactory. A grade of "U" will not be factored into your graduate GPA, and therefore will not affect your academic standing, but this still suggests failure to meet requirements for the degree. Additionally, a grade of "U" means that those credits are not applicable to the program of study and do not accrue towards the total number of required credits for thesis/dissertation. A grade of "U" affects the number of completed credits applicable for financial aid purposes. Should you receive a "U" grade you should discuss with your thesis advisor a plan of action to get back on track for timely completion of the degree.

Graduate School forms and resources related to thesis and dissertations:

- [Graduation Application deadlines](#)¹¹
 - Must be submitted to the graduate school several weeks in advance. Check website for exact dates
- [Master's Thesis Filing Guidelines](#)¹²
- [Doctoral Dissertation Filing Guidelines](#)¹³
- (Doctoral students only) [Dissertation Title Form](#)¹⁴

¹¹ <https://www.unr.edu/grad/graduation-and-deadlines>

¹² <http://www.unr.edu/grad/forms/thesis-filing-guidelines>

¹³ <http://www.unr.edu/grad/forms/dissertation-filing-guidelines>

¹⁴ <http://www.unr.edu/grad/graduation-and-deadlines/dissertation-title-form>

Notice of Completion:

This document is generally signed by the committee at the end of a successful thesis or dissertation defense and can be downloaded from the forms section of the Graduate School web site. In some cases, the Advisor may withhold their signature until revisions are made. At the time of your defense, provide the department Chair with a digital draft of your thesis or dissertation. This is not the final copy and will be reviewed for informational purposes, then not saved. Once the draft has been examined by the department Chair, and the committee has signed off on the notice of completion, you may obtain the signature of the Graduate director. Either the Department Chair or Graduate Director may sign the notice of completion. After collecting all departmental/committee signatures, obtain the signature of the Dean of the Graduate School and turn the form in before the posted deadline (posted on graduate school web site).

- Notice of completion – completed form should be submitted after all requirements have been met.
 - [Master's form](#) ¹⁵
 - [Doctoral form](#) ¹⁶
- [Exit Survey](#) ¹⁷

Final Review Approval:

After your final revisions have been completed and approved by the Chair of your advisory committee you need to obtain their signature on the Final Review Approval form and deliver this to the Graduate School for authorization and date to accept the final thesis.

- Final Review Approval – Obtain sign-off from advisory committee chair
 - [Master's Final Review Approval](#) ¹⁸
 - [Doctoral Final Review Approval](#) ¹⁹

Thesis Filing Guidelines:

Most students elect to deliver the thesis electronically, in this case the signature page (“Committee Approval Page”) can be on standard paper. If you elect to submit paper copies of your thesis/dissertation the signature page must be on the required bond. Pay careful attention to format, page numbering and spacing requirements specified by the graduate school. [Details and additional information](#) ²⁰ is available on the Grad School website.

Graduate School forms and resources related to thesis and dissertations:

- [Master's Thesis Filing Guidelines](#) ²¹
- [Doctoral Dissertation Filing Guidelines](#) ²²

¹⁵ <https://www.unr.edu/Documents/graduate-school/notice-of-completion-master-degree-updated.pdf>

¹⁶ <https://www.unr.edu/Documents/graduate-school/notice-of-completion-doctoral-degree.pdf>

¹⁷ <https://www.unr.edu/grad/forms-and-deadlines/exit-survey>

¹⁸ <http://www.unr.edu/Documents/graduate-school/thesis-final-review-approval-form.pdf>

¹⁹ <http://www.unr.edu/Documents/graduate-school/dissertation-final-review-approval-form.pdf>

²⁰ <http://www.unr.edu/grad/forms/thesis-filing-guidelines>

²¹ <http://www.unr.edu/grad/forms/thesis-filing-guidelines>

²² <http://www.unr.edu/grad/forms/dissertation-filing-guidelines>

- (Doctoral students only) [Dissertation Title Form](#)²³
- (Doctoral Programs only) [Doctoral degree admission to candidacy form](#)²⁴

VII. Requirements for specific degree programs Department of Geological Sciences

M.S. Geology

Required coursework: Aside from GEOL 790 and 795, there are no core courses specified for the M.S. degree in Geology. Course work laid out in the Program of Study is designed by the Advisory/Examination Committee on an individual basis.

Ph.D. Geology

Required coursework: Aside from GEOL 790 and 795, there are no core courses specified for the Ph.D. degree in Geology. Course work laid out in the Program of Study is designed by the Advisory/Examination Committee on an individual basis.

M.S. Geological Engineering

Required coursework: Aside from GEOL 790 and 795, there are no core courses specified for the M.S. degree in geological engineering. Students that are admitted to this program from Bachelor of Science degrees that are non-engineering related are expected to make up the following undergraduate course deficiencies as a minimum: CE/MECH 241 (statics), CE 372 (strength of materials), and MINE 350 (fluid mechanics). Additionally, a student's examination committee may recommend that the third semester of calculus and a course on differential equations be added as deficiencies. All M.S. students in geological engineering are required to take the Fundamentals of Engineering examination prior to graduation and this is the reason why deficiency coursework is required of students from non-engineering backgrounds. Moreover, all M.S. students are encouraged to take at least one course from each of the geological engineering faculty for purposes of broadening knowledge of the geological engineering discipline. Students have two degree options: thesis and non-thesis. Students opting for the non-thesis option are required to write a professional paper and pass an oral examination prior to graduation.

M.S. Geophysics

Required coursework: Aside from GEOL 790 and 795, there are no core courses specified for the M.S. geophysics. In addition, for those students specializing in seismology, there is a recommended course sequence for that can be obtained from the Seismology Office. For students specializing in other areas of geophysics, the course work laid out in the Program of Study is designed by the Advisory/Examination Committee on an individual basis.

²³ <http://www.unr.edu/grad/graduation-and-deadlines/dissertation-title-form>

²⁴ <https://www.unr.edu/Documents/graduate-school/17doctoral-degree-admission-to-candidacy-updated.pdf>

Ph.D. Geophysics

Required coursework: Aside from GEOL 790 and 795, there are no core courses specified for the Ph.D. degree in Geophysics. Course work as laid out in the Program of Study is designed by the Advisory/Examination Committee on an individual basis.

M.S. and Ph.D. in Hydrology and Hydrogeology

Contact the [interdisciplinary graduate program in Hydrologic Sciences](#)²⁵ for specific information relating to exams and coursework. (775) 784-6469

VII. A Final Word

The faculty hope that these Guidelines and suggestions will be helpful to you. It is our intent that this written record of what is required of both students and faculty involved in our graduate programs will encourage fruitful and enjoyable interactions in our Department. Please feel free to discuss any aspect of the graduate program with your Advisor, the Graduate Program Director, and the Department Chair. If you find aspects of this document that need clarification or revision, be sure to let the faculty know so that we can improve the Guidelines for the next edition. Good luck in your graduate studies!

Note: This handbook lists graduate program academic policies and procedures. It includes information on graduate school policies, degree requirements, timeline for degree completion, committee selection guidelines and comprehensive exam/thesis requirements. Every effort has been made to make this handbook accurate as of the date of publication; however, this handbook does not constitute a contractual commitment. Graduate programs may not offer all of the courses as described, and policies are subject to yearly review and changes with program director and Graduate Council approval.

Graduate Student Association

The [Graduate Student Association](#)²⁶ (GSA) represents all graduate students and promotes the welfare and interests of the graduate students at the University of Nevada, Reno. The GSA works closely with appropriate university administrative offices, including the Graduate School and Student Services and reports to the President of the University. The GSA government functions through the Council of Representatives, Executive Council and established committees.

Graduate School Forms

All [forms](#)²⁷ are available at The Graduate School website.

University of Nevada, Reno [Online Course Catalog](#)²⁸.

Copy of DGSE Handbook

A copy of this handbook can be found on the [DGSE website](#)

²⁵ <http://www.hydro.unr.edu>

²⁶ <https://www.unr.edu/gsa/>

²⁷ <https://www.unr.edu/grad/forms-and-deadlines>

²⁸ <https://catalog.unr.edu/>

Recommended schedule for M.S. Degree in Geological Sciences

First semester:

1. Graduate seminar (Geol 790)
2. Select Thesis advisor
3. Discuss program of study with Thesis advisor
4. Discuss possible thesis topics with Thesis advisor
5. Begin thesis research

Second semester:

1. Graduate seminar (Geol 790)
2. Select Advisory/Examining committee
3. Prepare thesis proposal
4. Comprehensive exam (GEOL 795). Hold first committee meeting to defend proposal and obtain approval for Program of Study from committee.
6. Submit Program of Study to Graduate School

Third semester:

1. Complete 3/4 of classes
2. Discuss thesis outline with Thesis advisor. Write introductory and background sections of thesis.
3. Go to Graduate School website and familiarize yourself with upcoming deadlines to apply for graduation and submit notice of completion.

Fourth Semester:

1. Graduate Seminar Geol 790
2. Complete all classes for MS degree
3. Submit rough draft of thesis text to advisor early in semester
4. Wrap up thesis research early in semester
5. Circulate thesis draft to committee, allowing sufficient time for their review (usually 3 weeks minimum).
6. Apply for graduation
7. Schedule final defense with committee once draft is approved.
8. Present public thesis defense and revise thesis as necessary.
9. Obtain signatures on notice of completion and turn in with thesis by deadline posed on the Graduate School web site.

Recommended schedule for Ph.D. Degree in Geological Sciences (entering with M.S.)

First semester:

1. Graduate seminar (Geol 790)
2. Select Dissertation advisor
3. Discuss program of study with Dissertation advisor
4. Discuss possible Dissertation topics with advisor
5. Select 2 additional departmental members for Advisory/Examining committee

Second semester:

1. Finish selecting Advisory/Examining committee
2. Prepare dissertation proposal outline and draft
3. Hold committee meeting: pass qualifying exam, obtain approval for classes, proposal outline, and Program of Study from committee.

Third semester:

1. Continue class work
2. Dissertation research (begin during prior summer)
3. Complete dissertation proposal and circulate to committee for approval.
4. Copy of proposal to Graduate Director

Fourth Semester:

1. Complete class work
2. Pass written and oral comprehensive exam
3. Apply for Candidacy
4. Continue dissertation research
5. Submit Program of Study to graduate school

Fifth semester:

1. Wrap up research
2. Begin writing introductory sections of dissertation
3. Begin circulating rough drafts of dissertation to advisor
4. Go to Graduate School web site and familiarize yourself with upcoming deadlines to apply for graduation and submit notice of completion.

Sixth Semester:

1. 2. Complete residency requirement
2. Circulate draft of dissertation to advisor early in semester. (Allow 3 weeks for review)
3. Circulate revised draft to committee (allow 3 to 4 weeks for review)
4. Apply for graduation
5. Schedule final oral exam (defense) with committee.
6. Public presentation of thesis and defend to committee, revise dissertation as necessary
7. Submit a draft of dissertation at time of defense to department Chair.
8. Obtain signatures on notice of completion and turn in with thesis by deadline posed on the Graduate School web site.

Recommended schedule for Ph.D. Degree in Geological Sciences (entering without M.S.)

First semester:

1. Graduate seminar (Geol 790)
2. Select Dissertation advisor
3. Discuss program of study with Dissertation advisor
4. Discuss possible Dissertation topics with advisor

Second semester:

1. Select Advisory/Examining committee
2. Prepare dissertation proposal outline
3. Hold first committee meeting, obtain approval for classes, proposal outline and Program of Study from committee

Third semester:

1. Dissertation research
2. Continue class work
3. Work on dissertation proposal
4. Schedule Qualifying Exam (after 24 credits)

Fourth Semester:

1. Continue dissertation research
2. Complete dissertation proposal and circulate to committee
3. Submit Program of Study to graduate school

Fifth semester:

1. Continue dissertation research
2. Complete class work
3. Pass written and oral comprehensive exam
4. Apply for Candidacy

Sixth Semester:

1. Complete residency requirement
- 2.. Wrap up dissertation research.
3. Begin writing introductory sections of dissertation.

Depending on progress on your research topic, continue with coursework and thesis credits until prepared to proceed. Note the expectation for time to completion for a PhD without an MS is a maximum of 5 to 6 years.

Seventh semester:

1. Wrap up dissertation research
2. Circulate draft of dissertation to advisor (Allow 3 weeks for review)
3. Go to Graduate School web site and familiarize yourself with upcoming deadlines to apply for graduation and submit notice of completion.

Eighth semester:

1. Circulate revised draft to committee (allow 3 to 4 weeks for review)
2. Apply for graduation
3. Schedule final oral exam (defense) with committee
Post public announcement of your defense a minimum of 1 week in advance and choose a room that will hold a sufficient public audience (30+ people)
4. Public presentation of thesis and defend to committee, revise dissertation as necessary
5. Submit a draft of dissertation at time of defense to department Chair.
6. Obtain signatures on notice of completion and turn in with thesis by deadline posed on the Graduate School web site.