

University of North Dakota  
**Department of Geology and Geological Engineering**  
**Graduate Student Policy Statement**

December 9, 2010

**Introduction**

This statement of policies is designed to assist the students of the Department of Geology and Geological Engineering (GGE) during their residence at the University of North Dakota (UND). The information presented here applies to graduate students and is intended to supplement the **Graduate School Bulletin (www.UND.edu)**. Changes in or exceptions to these policies may be granted upon petition to the faculty through the student's advisory committee or advisor.

**Graduate Entrance Requirements**

Students seeking admission to pursue a graduate degree in geology should have completed at least 30 semester credit hours in the geological sciences with a GPA of at least 3.00. Ten upper division semester hours of geological science and the equivalent of physical geology, historical geology, and a geology field camp are required. Students have the option to fulfill these requirements by: 1) taking the appropriate undergraduate courses for credit; 2) demonstrating competency by taking appropriate advanced courses; or 3) demonstrating competency by written examinations in general or specific subject areas. Students with degrees in other areas of science or engineering may, upon approval of their advisory committee, use upper division credits in their discipline in place of the geology requirements, but must complete the equivalent of physical geology, historical geology, and geology field camp (the equivalent of approximately 14 semester credits).

The Master of Arts (M.A.) Degree requires mathematics through Math 165 or its equivalent. The Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees require mathematics through Math 265 or its equivalent. Courses taken by a Ph.D. student to satisfy the mathematics requirement cannot also be used as part of the Scholarly Tools Requirement (see below). Minimum preparation in chemistry and physics is one year of each. Deficiencies in undergraduate preparation may be corrected by taking required undergraduate courses, without graduate credit, after beginning graduate work in Provisional or Qualified Status. Table 1 lists the courses for which graduate credit is not given.

**General Graduate Degree Requirements**

Before enrolling for the first semester, the student is required to consult with a GGE appointed graduate advisor, who will act as the student's advisor until an advisory committee is appointed. Advisory committees are approved by the Dean of the Graduate School upon the recommendation of the Chair or Graduate Director. Students are required to form an advisory committee selected and submitted to the Chair or Graduate Director before second

Table 1. Courses for which no graduate credit is given

Course	Number
Physical Geology	Geol 101
Earth Through Time	Geol 102
Mineralogy	Geol 318
Field Geology (Summer)	e.g., Black Hills Field Station
Structural Geology	Geol 330
General Physics	Phys 211 and Phys 212 or
University Physics	Phys 251 252
General Chemistry	Chem 121 and Chem 122
Analytical Geometry and Calculus	Math 165, Math 166, and Math 265

semester enrollment. Advanced-degree candidates should consult the **Graduate School Bulletin** (see [www.UND.edu](http://www.UND.edu)) regularly to assure themselves that they are making proper progress toward the degree and are fulfilling all degree requirements of the Graduate School.

At least one academic year and a summer of field or laboratory work are required for a full-time graduate student to complete requirements for a Master's degree. For the doctoral degree a minimum of three years beyond the baccalaureate is required for full-time students. Part-time graduate students, including graduate assistants, must allow more time to complete work for these degrees.

#### **Final Presentation and Examination (Defense)**

A final examination of the completed Master's Thesis or Doctoral Dissertation is required by the Department of Geology and Geological Engineering (GGE) and the Graduate School. The examination includes an oral presentation of a student's graduate research and a defense. The presentation is open to all and is the principal means of communicating the results of the research to the University community. Accordingly, the student should ensure that the presentation is made in a professional manner and is intelligible to a diverse, educated audience. Following a period for questions from the general audience, the student and the Advisory Committee, together with any interested University of North Dakota faculty, will immediately convene for the thesis/dissertation defense. The defense is intended to determine not only the depth of understanding of the research by the candidate, but also whether the results are accurate and sufficient to merit awarding of the degree. Hence, this part of the examination may include questioning over the course of study for the degree as well as over the research. The final examination may be passed with one dissenting vote.

The final examination must be scheduled at least one week in advance for Master's degrees and two weeks in advance for Doctoral degrees. The completed thesis/dissertation must be submitted to the Advisory Committee at least one week prior to the examination. Additional requirements appear in the Graduate Bulletin.

### ***Departmental Copy of Thesis or Dissertation***

Graduate students are obligated to submit an unbound copy (see Graduate School Bulletin) of the thesis or dissertation to GGE. The student must consult the current edition of **Instructions for the Preparation of Theses and Dissertations** (available from the Graduate School) before and during the writing of the thesis or dissertation. SI units are to be used in all theses and dissertations; any exceptions must be approved in advance by the student's advisory committee. "In-pocket" thesis or dissertation plates should be folded accordion-style so that identifying information on the plate is visible from the outside after the last fold. Identifying information **must** consist of author and date in addition to plate number [e.g., Plate II, Smith (2000)]. [*Note, currently the Graduate School does not permit pockets in theses or dissertations.*]

### ***Regulations Concerning Other Courses***

Graduate students are required to present (preferably during the last semester of residence) the results of their thesis or dissertation research at a seminar. Each may receive credit for this if duly enrolled (Geology 422, Seminar II).

The following courses may be taken **only** with the prior approval of the faculty member concerned: Senior Thesis (Geol 490), Geologic Problems (Geol 491), Research (Geol 590), Directed Studies (Geol 591), Continuing Enrollment (Geol 996), Thesis (Geol 998), and Dissertation (Geol 999).

### **Master Thesis and Ph.D. Dissertation Proposals**

Student's will give a proposal presentation to the (entire) faculty on the topic chosen likely to be the focus of their Master's or Ph.D. studies. A proposal presentation should occur as soon as possible (by the end of their first year or beginning of the second year) in the knowledge that the faculty will assist with their questions help the student accomplish the tasks and goals of the project.

### **Master's Degrees**

Master's students must complete a 30-credit course of study, including four to six credits of Thesis (Geol 998). A minimum of 20 credits must be taken from the courses listed under Geology in the Graduate School Bulletin. Selection of a broad program of study for the master's student is expected and is the responsibility of the student and the student's advisory committee. Students are encouraged to prepare theses in a manner conducive to publication in a professional journal.

The committee may require course work in other departments, e.g., Computer Science, Biology, Chemistry, Physics, Mathematics, to enhance the student's program of study. Course work in cognate areas may be included in the program of study if that course work comprises a minimum of nine credit hours. Minors in academic areas outside the GGE must include nine credit hours of work from courses listed in the Graduate Bulletin; one member of the advisory committee must be from the department in which the minor is pursued. Courses from other

departments that total less than nine credit hours may be included in the 30 credit hours in the program of study, provided that they are listed in the Graduate Bulletin, and are approved by the Dean of the Graduate School.

### **Doctoral Degrees**

Doctoral students must complete a 90-credit course of study beyond the Bachelor's degree. Credits earned as part of a Master's degree and subsequent graduate work (usually up to a total of 60 credits) may be included in the 90 credits. Courses taken to satisfy the scholarly tools requirement (see below) may be included in the 90 credits if they are listed in the Graduate Bulletin. As soon as possible after enrollment, and prior to the end of the first year, the student, together with an advisory committee, will prepare a course of study. Doctoral students are expected to take a part of their course work outside the GGE.

**Qualifying Exam.** The faculty may require a student to take a qualifying examination to demonstrate whether he or she is capable of pursuing a Ph.D. program. The examination, if prescribed, is to be taken before the end of the student's first year after receipt of the Master's degree.

**Scholarly Tools Requirement.** Doctoral students must meet the scholarly tools requirement by:

- 1) Achieving proficiency in two languages (e.g., German, French, Russian), or
- 2) Achieving proficiency in one language and successful completion of two other scholarly tools courses, or
- 3) Demonstrating proficiency in four scholarly tools courses.

“Proficiency” shall mean:

- 1) In the case of a language, proficiency is defined by the Graduate School.
- 2) In the case of scholarly tool courses, other than languages, one of the following procedures is appropriate:
  - a) Complete the course for credit with a grade of “C” or better.
  - b) Audit the course, doing required work, taking exams, and obtaining a statement from the instructor that if given a grade it would be at least a “C.” This procedure will permit completion of the requirements when registration in the course during a particular semester might not otherwise be possible due to high course load.
  - c) Demonstrate proficiency by successfully challenging the course in question.

### **Doctoral Comprehensive Examination**

Comprehensive examinations will consist of two parts, written and oral. The written part will not exceed eight hours and the oral part is not to exceed three hours. Both parts of the examinations must be passed. Either part may be repeated at the discretion of the student's Advisory Committee. The Comprehensive Examination, or either part of it, may only be repeated once.

**Written Exam.** The written part will encompass questions from four subject areas: 1) Sedimentology, stratigraphy, and paleontology; 2) Geomorphology and hydrogeology; 3) Mineralogy, petrology and geochemistry; and 4) Structural geology, tectonics and geophysics. The student's Advisory Committee Chair will

request questions from all members of the GGE graduate faculty and the member at large of a student's Advisory Committee. Questions will encompass concept, process, and fact, but questions concerning concepts will be emphasized. The Advisory Committee Chair will coordinate the design of the examination from the questions submitted. Faculty are requested to indicate how long each question is likely to take to answer so as to help in

Table 2. Acceptable scholarly tools courses\* (other than languages)

Evolution	Biol 312
Genetics	Biol 350
Limnology	Biol 433
Biometry	Biol 470
Quantitative Analysis	Chem 330
Organic Chemistry	Chem 341, 342
Introduction to Business and Economic Statistics	Econ 210
Computer Applications in Engineering	Engr 200
Dynamics	Engr 202
Mechanics of Materials	Engr 203
Remote Sensing	Geog 275
Climatology	Geog 334
Computer-Assisted Cartography	Geog 471, 471L
Introduction to GIS	Geog 474
Digital Image Processing	Geog 475
Advanced Engineering Mathematics	Math 352, 353
Theory of Probability	Math 403
Differential Equations	Math 412
Statistical Theory I and II	Math 421, 422
Advanced Calculus	Math 431, 432
Numerical Analysis	Math 461, 462
Fluid Mechanics	ME 306
Thermodynamics	ME 341, 342
Mechanics	Phys 317, 318
Elementary Solid State Physics	Phys 320
Electricity and Magnetism	Phys 328
Nuclear Physics	Phys 434
Introduction to Statistics	Psy 241
Advanced Univariate Statistics	Psy 541
Multivariate Statistics for Psychology	Psy 542
Experimental Design	Psy 543

\*This list is not meant to be exclusive. Other courses of comparable academic level may be more valuable to a given program of study, but these must be submitted to the student's advisory committee for approval. Submission for approval must be done before the middle of the semester (spring or fall only) previous to any term in which the student plans to take those courses. This will allow sufficient time for the committee to act on the request.

designing the exam. Each question will be graded as “pass” or “fail.” The final decision as to whether a student passes the written part rests with the Advisory Committee.

**Oral Exam.** The oral part of the comprehensive examinations will follow the written part as soon as practical, preferably within two weeks. The oral exam may pursue further questions on the written part or other lines of questioning. The oral examining group will consist of the student's Advisory Committee, with the committee Chair, also acting as chair of the examining group, plus an additional geology faculty member selected by the GGE Chair. Passage of the oral part requires a passing vote by at least 80% of the oral examining group, including the chairperson of the examining group.

#### **Financial Assistance**

Various kinds of financial aid are available to graduate students. The **Graduate School Bulletin** (see [www.UND.edu](http://www.UND.edu)) should be consulted for details.

By no later than March 1 of each year, those students wishing a Graduate Teaching Assistantship for the following year should present their request in writing to the Chair, stating whether they desire a quarter or half-time appointment. Application for a teaching assistantship may also be made when applying for admission to the Graduate School. Except under unusual circumstances, teaching assistantships will not be granted to Master's degree students for more than two years. Doctoral students normally will not be allowed more than three years' support past the Master's degree as half-time teaching assistants. Exceptions can be made for students entering with a degree in a field other than Geology.

#### **Class-related Field Trip Mileage Charges**

Students **may** be charged for all student-related costs for required field trips. These charges become an obligation of the student, and if not paid will become a debt with the University. The use of personal vehicles on field trips is discouraged.

#### **Office Assignment**

Office space may be assigned to graduate students by the Chair upon recommendation of the Graduate Director. The following priorities will be used for assigning and sharing office space :

1. Enrollment and satisfactory progress in a graduate degree program.

2. Enrollment in a doctoral program.
3. Seniority.
4. Extent of activity as a graduate teaching assistant.
5. Status and characteristics of thesis or dissertation activity.
6. Social, personal, or medical consideration.

Those approaching three years of residence for a Master's degree and five years of residence for a Ph.D. will normally have lowest priority for office space.

### **Procedures and Responsibilities of All Graduate Students**

#### ***Building***

- 1) The use of Leonard Hall is considered to be a privilege and not a right.
- 2) Furniture or equipment is not to be removed from a room without authorization. If furniture or equipment is rearranged or removed from the room temporarily, it is to be returned to its original position immediately after use.
- 3) Repairs or defects in rooms (e.g., faculty ventilator, loose tile) are to be reported to the Administrative Secretary.
- 4) Lights are to be turned off and windows are to be closed when leaving a room.
- 5) Unauthorized persons are not to be admitted into Leonard Hall after it is locked.
- 6) Any abuse of the Leonard Hall is to be reported to a faculty member.

#### ***Equipment***

- 1) The use of equipment is also considered a privilege. Before using any equipment requiring skill in operation, permission must be obtained from the proper individual.
- 2) Equipment is to be inspected for defects prior to use, and any defects are to be reported to the proper individual. Do not leave equipment in a nonoperation condition without leaving a note and reporting to the proper authority.
- 3) After use, equipment is to be cleaned, as well as the work area, and returned to its proper storage area, if applicable.
- 4) Any student in charge of specific equipment has the authority to refuse use of this equipment to other students. Also, any student in charge of equipment has the authority and responsibility to report any abuse of equipment to the proper faculty member.
- 5) Use of Leonard Hall computer facilities is governed by the UND ITSS, SEM, GGE and faculty laboratory policies, copies of which are available on-line.

#### ***Other***

- 1) Expendable supplies in the department office are not for student use.
- 2) GGE's Administrative Secretary is **not** available for aid in preparing any student's class work.

- 3) Those using the last, or nearly the last, of expendable supplies should notify the proper person so these materials can be reordered.

### **Specific Responsibilities of Graduate Students**

#### ***All Students***

- 1) Graduate students may be requested to render GGE assistance at any time, including the conduct of educational tours of Leonard Hall. In the case of their being asked to oversee a laboratory or other facility, they will be given the authority to accompany the responsibility.
- 2) Personal property (e.g., home related) of a graduate student is **not** to be stored in the student's office. Any additional space required must be gained by prior permission.
- 3) The UND prohibits sexual harassment of students, faculty, and staff. All University students, faculty, and staff are expected to comply with this policy. Students are encouraged to familiarize themselves with current University policies and rules by consulting the **Code of Student Life**. A complete copy of the current University policy may be obtained from the Dean of Students Office or the Affirmative Action Office (and is available on-online).

#### ***Graduate Teaching Assistants***

##### **A. General**

1. The Graduate Assistant Handbook provides guidance to general policies and procedures for graduate teaching assistants (GTAs), and should be consulted.
2. Because a GTA is both an employee and a student, where each role demands excellence and commitment, limits are placed on the amount of time and effort to be spent in each role. Half-time GTAs are expected to average 15 hours per week in performing their duties and quarter-time GTAs are to average 7 ½ hours per week. The duties accompanying the GTA assignment are primarily the teaching of the laboratory. Other duties, however, may be assigned by the course instructor or laboratory coordinator as time permits.
3. Normally, GTAs best qualified for a particular course will be assigned to that course. Assignments to and/or requests for particular courses will be made as soon as possible after preregistration and GTA appointments are made.
4. In addition to the evaluation by the supervising instructor, the GTA's performance also will be evaluated by the Chair or Graduate Director at least once each semester.
5. GTAs that have a problem associated with their teaching or other assignment should solve the problem using the proper chain of command. Any problem should first be discussed with the course instructor. If the problem cannot be solved with the instructor, then the Graduate Director should be informed. The problem should then be discussed (either by the GTA or Graduate Director) with the GGE chair and, if still not solved, the Dean of the Graduate School.



## B. Specific GTA Responsibilities

1. Primary responsibilities
  - a. Preparation for the laboratory, including the gathering of materials, gaining a thorough understanding of the material to be covered, planning any explanatory laboratory material, and, when required, preparation of laboratory exams.
  - b. Instruction/supervision of the laboratory for its full duration.
  - c. Grading of laboratory assignments and exams.
  - d. Participation in class field trips.
  - e. Attendance at regular weekly meetings with the supervising instructor and/or coordinator.
2. Secondary responsibilities. These are additional responsibilities that may be assigned by the faculty supervisor if time permits.
  - a. Preparation of new laboratory exercises for the course.
  - b. Grading of lecture exams. The grading of lecture exams by GTAs should be done only when answers to questions are not subjective (i.e., true/false, multiple choice, fill-in, etc.) and when the key is provided.
  - c. Miscellaneous. This includes any of a variety of duties that would assist in the course or better the course in the future.
3. General Guidelines for Laboratory Management.
  - a. Continuity of laboratory studies is to be maintained and students are to be informed in advance of each laboratory assignment and the materials required.
  - b. Laboratory policies should be formulated at the beginning of each semester and adhered to. Exceptions may be made with the consent of the faculty supervisor.
  - c. Questions regarding both laboratory and lecture are to be entertained and encouraged. If the answer to a question is not immediately known, it should be found and given at the next laboratory session.
  - d. Extra assistance to students is to be rendered if it is within reason.
  - e. All students are to be treated equally.
  - f. Personal opinions regarding GGE and UND policies and other similar matters are not to be voiced in the laboratory.
  - g. A professional manner and neat appearance is to be maintained at all times.

### **Responsibilities of Faculty to GTAs**

In order that the best possible laboratory course be constructed and presented, the course instructor has the following responsibilities:

1. Prepare a laboratory syllabus to be given to the GTA prior to the first laboratory meeting of the semester.
2. Prepare all laboratory exercises.
3. Review laboratory exams written by the GTA.

4. Observe and constructively evaluate the GTA's performance at least once each semester. Discuss the evaluation with the GTA.
5. Hold regularly scheduled weekly meetings with the GTA to discuss exercises, objectives, and performance.

### **Senior Theses**

A thesis is 'a formal proposition, advanced and defended by argumentation . . . a formal treatise on a particular subject' (Funk and Wagnall's Standard College Dictionary, 1974). A GGE Senior Thesis is intended to be a learning experience (in research, writing, and presentation). GGE faculty have the following expectations:

1. The topic shall be field- or laboratory-oriented research, or (preferably) a combination of the two; a library topic is not acceptable. Computer modeling is considered to be a category of laboratory research. Testing of a scientific hypothesis is a required part of the senior thesis.
2. The topic must be approved by a faculty member, who will supervise the thesis.
3. The format of the thesis must be approved by the thesis adviser, and must conform to the format guidelines of any major English-language journal in which the thesis could be published. GGE expects that the thesis will contain a Title page, Table of Contents (including list of figures and tables), an Abstract, Introduction (including Purpose of the research), field and laboratory Procedures, Results, Discussion, Conclusions, and References Cited.
4. There is no minimum or expected length for the Senior Thesis, as long as the items under (3) are adequately addressed.
5. The results of the thesis research will be presented before the Department in a Seminar scheduled before graduation, but after the majority of the research has been completed.

### **F. D. Holland Jr. Geology Library**

The F. D. Holland, Jr. Geology Library (Holland Library) is a branch of the Chester Fritz Library that sets general policies. Specific policies regarding the Library and its use are set by the Holland Librarian and the GGE faculty. The Holland Librarian and GGE reserve the right to restrict the privileges of using the Holland Library if this privilege is misused. Library hours are posted by the door and policies concerning the use and circulation of materials are posted in the library. Certain special material (air photos, maps, open-file reports, reserve books) have restricted circulation; regulations governing these collections are posted near the materials. Special permission must be requested for use of Library materials in the field. All Library materials must be physically returned to the library at the end of each academic term. Returning Library material promptly after use is suggested. Each person is requested to maintain library quiet in the Holland Library.

### Rooms of Limited Access (Subject to Change)

Certain rooms of Leonard Hall are to be used **only** with authorization by the faculty member in charge. The GGE Office is to be used for special work only with permission from the Administrative Secretary. Those rooms with limited access are hereby designated and listed in Table 3, along with the faculty members and staff in charge of the rooms.

Table 3. Leonard Hall room use/Faculty–Staff responsibilities

Room	Name	Faculty/Staff
Basement Cage 1	Sample Storage	Hartman
Basement Cage 2	Sample/Equipment Storage	Chair
Basement Cage 3	Sample/Equipment Storage	Chair
Basement Cage 4	Library Storage	Librarian
Basement Room 1	John R. Reid Research Laboratory	Hartman
Basement Room 2b	Storage	Chair
Basement Room 3	Petroleum Engineering Laboratory	Zeng
Basement Room 4	Sample Preparation Laboratory	Korom
Basement Room 5	Quaternary Research	Gerla
Basement Room 9	Geomorphology/Geoengineering Lab	Putkonen, Yarbrough
Basement Room 9a, b	Sample Preparation	Zeng
Basement Room 11	Geothermal Research	Gosnold
Basement Room 13	GeoEngineering	Zeng
Basement Room 15	Paleontology	Hartman
Basement Room 17	Sample Storage	Chair
Floor 1, Room 101	GGE Office	Chair, Adm. Sec. Katie Sagstuen
Floor 1, Room 101a	GGE Chair's Office	Chair
Floor 1, Room 102	Soda/Magazine Room	Chair
Floor 1, Room 103	Faculty Office	Putkonen
Floor 1, Room 105	Conference Room	Chair
Floor 1, Room 107	Teaching Lab	Various
Floor 1, Room 108	Entry	Chair
Floor 1, Room 108a	Computer Laboratory	Chair, SEM, ITSS
Floor 1, Room 108b	Computer Laboratory	Yarbrough
Floor 1, Room 110	Teaching Lab	Various
Floor 1, Room 112	Teaching Lab	Various
Floor 1, Room 113	Faculty Office	LeFever
Floor 1, Room 114	Faculty Office	Gosnold
Floor 2, Room 201	Mineralogy Laboratory	Perkins

Floor 2, Room 202	Faculty Office	Perkins
Floor 2, Room 204	Faculty Office	Hartman
Floor 2, Room 203, 205, 205a	Isotope Geochemistry Laboratory	Matheney
Floor 2, Room 206	Mineralogy Laboratory (X-Ray)	Perkins
Floor 2, Room 207	Faculty Office	Matheney
Floor 2, Room 208	Teaching Collections	Hartman/Perkins
Floor 2, Room 209, a, b	Paleontology Laboratory	Hartman
Floor 2, Room 210	Petrology Laboratory	Perkins
Floor 2, Room 211	Teaching	Various (CILT equipment)
Floor 2, Room 212	Sedimentology Laboratory	LeFever
Floor 2, Room 213	Faculty Office	Gerla
Floor 2, Room 214	Teaching	Various (CILT equipment)
Floor 2, Room 215	Teaching	Various (CILT equipment)
Floor 2, Room 217	Faculty Office	Korom
Floor 3, Room 301	Faculty Office	PREEC: Wang
Floor 3, Room 303, 304	EARL: Water Quality Laboratory	Xu; Korom
Floor 3, Room 322	Entry	Forsman
Floor 3, Room 322a	Laboratory	Forsman
Floor 3, Room 322b	Faculty Office	Forsman
Floor 3, Room 322c	Faculty Office	PREEC: Butler
Floor 3, Room 324	Faculty Office	EARL: Xu
Floor 3, Room 326, 328, 330	F. D. Holland Jr. Library	Librarian Buri
Floor 3, Room 330A	Faculty Office	Zeng