



***Handbook for
Graduate
Students in
Geography &
Geology***

2011-2012 Academic Year

Geography & Geology

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I. INTRODUCTION

The Department of Geography and Geology offers a program of study leading to the Master of Science degree in Geology. The general focus of the program is the development of professional geologists capable of conducting research in geology through broadly based study of modern geological processes and their ancient analogs. The program includes both a thesis and non-thesis option, both of which provide a foundation for employment in the environmental fields, mineral and energy industries, and government agencies. In addition, the thesis option prepares students for advanced study leading to the doctoral degree while the non-thesis option prepares students for professional licensure in geology. Specific goals are to provide advanced research and educational opportunities in the geological sciences, and to prepare geologists for solving contemporary geologic problems. Specific objectives are: 1) to develop research competence in geology; 2) to develop professional competence in the assessment of water, energy and mineral resource potentials; 3) to develop a level of research competence in geology that encourages continued effort towards the doctoral degree; and, 4) to provide the scientific community with meaningful geological data.

All students in the M.S. program require an in-depth knowledge of a chosen specialty, a knowledge of available resource materials, basic writing skills, and problem-solving skills. In addition to these basics, students continuing into a Ph.D. program will benefit from a greater depth of knowledge of areas related to their specialty. The program requirements outlined in the following sections provide insights into procedures, expectations, and regulations. Our program provides for construction of a degree plan that meets common basic needs of all masters-level geology graduate students as well as specific course work for individuals. This handbook, intended to serve as a guide for your graduate career in geology at UNCW, provides insights into the procedures and requirements that are necessary for efficient administration of the program. Official Graduate School regulations and procedures are found in the current UNCW Graduate Catalogue. This handbook provides a brief summary of those regulations and procedures that have significance to geology graduate students.

II. DEGREE REQUIREMENTS

A. Requirements for the Master of Science in Geology

Option 1 - Thesis Option

1. The program requires at least 30 semester hours of graduate credit, with a maximum of six credit hours for the thesis, three credit hours for seminars, and six credit hours of directed independent study (GLY 591). Each student must complete GLY 501 and GLY 502.
2. A maximum of six (6) semester hours of credit, if approved by your graduate committee, may be transferred from another accredited institution. Grades earned on transfer work must be equivalent to a "B" or better.
3. A minimum of 24 semester hours of graduate study must be completed in residence at UNCW, including course work and thesis.
4. At least 18 semester hours of course work must be completed in geology.
5. Undergraduate courses taken to make up deficiencies will not count toward the 30 semester hours required.
6. All deficiencies must be remedied before graduation.
7. Each student must successfully complete a comprehensive oral examination based on prior course work, and prior to registering for thesis hours.
8. Each student must complete an approved course of study including an approved thesis prospectus within five years of the date of first registration for graduate study. An approved thesis prospectus must be completed prior to registering for thesis hours.

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9. Each student must present and defend a thesis, based on original research and acceptable to the committee, before graduation. The oral thesis defense is open to the public.

Option 2 - Non-Thesis Option (NTO)

The goals of the NTO are to provide a foundation for employment as an entry-level professional geologist in environmental fields and firms, mineral and energy industries, and government agencies. Completion of the NTO assists students in obtaining professional licensure.

1. The program requires at least 36 semester hours of graduate credit, including a maximum of 3 credits for internship or final project, three credit hours for seminars, and six credit hours of directed studies.
2. A maximum of six semester hours of graduate credit, if approved by your non-thesis graduate committee, may be transferred from another accredited institution. Grades earned on transfer work must be equivalent to "B" or better. A minimum of 30 semester hours of graduate courses must be completed at UNCW including course work, internship, and final project. At least 27 semester hours must be completed in the department.
3. Each student must complete an approved course of study within five years of the date of first registration for graduate study.
4. Each student must complete the following core curriculum: GLY 501, GLY 502, GLY 525, GLY 526, GLY 565, GGY 522, and GLY 597 or GLY 598.
5. Each student will take a written comprehensive examination after the successful completion of all required core coursework with the exception of GLY597 and GLY598.
6. Each student must complete either GLY597 or GLY598, and prepare and present a scholarly paper/report acceptable to the committee, prior to graduation. A final seminar is required.

B. Course Offerings

All geology graduate courses are designated by the prefix GLY and are numbered at the 500 level.

GLY 501. Research Methods in Geology (2) Scientific proposal preparation, experimental design, scientific ethics, library use, safety, project management, data analysis, quality assurance and computer applications. One lecture and two laboratory hours per week.

GLY 502. Technical Communication in Geology (2) Scientific manuscript preparation and communication techniques: writing techniques, manuscript format, abstracts, oral and poster presentations. One lecture and two laboratory hours per week.

GLY 503. Advanced Field Methods (4) A survey of geotechnical field techniques applicable to structural geology, geophysics, hydrology, map interpretation, rock, soil and sediment description, engineering and economic geology. Two lecture and four laboratory hours per week. Required field trips.

GLY 510. Sedimentary Environments (3) Prerequisite: Petrology, stratigraphy, field camp. Survey of ancient sedimentary environments with an evaluation of the criteria used in their recognition in the rock record. Specific ancient sedimentary sequences are examined and compared to their modern counterparts. Three lecture hours per week. Field trips.

GLY 511. Clastic Petrology (3) Prerequisite: Optical mineralogy. Classification and description of sandstones and mudrocks and evaluation of their diagenesis. Application of principles to economic deposits. Laboratory exercises concentrate on microscopic and X-ray techniques of analysis. Two lecture and three laboratory hours per week. Field trips.

GLY 512. Carbonate Petrology (3) Prerequisite: Optical mineralogy or permission of instructor. An examination of sedimentary, igneous, and metamorphic carbonate rocks with emphasis on observation, description and interpretation. Plus an in depth look into how carbonate petrology is

applied in the exploration and exploitation of natural resources including hydrocarbons, base metals, precious metals and industrial minerals. Two lecture and three laboratory hours per week.

GLY 513. Advanced Igneous Petrology (3) Prerequisites: Optical mineralogy, petrology, structural geology, or permission of instructor. Principles and methodology underlying the physical and chemical processes affecting the genesis of igneous rocks in various tectonic settings. Topics include the application of thermodynamics, chemographic relationships, and phase equilibrium to the differentiation of magmas and the crystallization of igneous minerals, and geothermobarometric and geochronologic investigation of igneous rocks. Two lecture hours and three laboratory hours per week. Field trips.

GLY 514. Advanced Metamorphic Petrology (3) Prerequisites: Optical mineralogy, petrology, structural geology, or permission of instructor. Principles and methodology underlying the study of metamorphism and metamorphic facies in varying rock compositions, and petrotectonic settings. Topics include metamorphic phase equilibria and diagrams, geothermobarometry and P-T--time paths, metamorphic mineral crystallization and recrystallization, and textural relationships in metamorphic rocks having variable protoliths and histories. Two lecture and three laboratory hours per week. Field trips.

GLY 515. Methods of Sedimentology (3) Prerequisite: Petrology. A survey of the parameters of sedimentation. Emphasis on the processes involved in the formation of sedimentary rocks, including their origin, transport, deposition and lithification of rock-forming minerals. Techniques of physical and chemical analyses of sediments are stressed. One lecture and six laboratory hours per week. Field trips.

GLY 520. Global Climate Change (3) Prerequisites: General chemistry, college physics, and calculus with analytic geometry. Analysis of natural and anthropogenic global climate change. Historical and geological records of climate including sediment, tree ring, and ice core analysis. Physics and chemistry of climate including Earth's energy balance, global carbon cycle, climate modeling, atmospheric composition and dynamics. Three lecture hours per week.

GLY 525. Engineering Geology (3) Prerequisite: Consent of instructor. Properties, uses, and engineering significance of solid earth materials and water. Principles of stress and strain and related material responses. Methods, techniques, and instrumentation of engineering geologic investigations. Three lecture hours per week.

GLY 526. Geohydrology (4) Prerequisites: Two semesters of college calculus and petrology. Geology of ground waters and related aspects of surface waters. Methods of groundwater resource evaluation, protection, exploitation, and contaminant remediation. Three lecture and two laboratory hours per week.

GLY 531. Micropaleontology (3) Prerequisite: Invertebrate paleontology or consent of instructor. Paleobiology and geological history of microorganisms, emphasizing the classification and systematics of major microfossil groups. Two lecture and three laboratory hours per week. Field trips.

GLY 533. Paleoecology (3) Prerequisite: Invertebrate paleontology or consent of instructor. Principles of ecological faunal analysis as primarily applied to the marine fossil record. Emphasizes the integration of form and function, taphonomy, and community development through time, and sedimentology/stratigraphy as a synthetic approach to paleoenvironmental, paleobiological and evolutionary analyses. Applications to biostratigraphy are considered. Three lecture hours per week. Field trips.

GLY 535. Stratigraphic Paleontology (3) Prerequisite: Invertebrate paleontology, stratigraphy, or consent of instructor. Analysis of the historical, geological and biological basis of biostratigraphy

emphasizing the application of biostratigraphic principles and techniques in the development of high-resolution relative time scales. Three lecture hours per week. Field trips.

- GLY 540. Regional Geology of North America (3)** Prerequisites: Structural geology, stratigraphy. Survey of the rocks, structures, natural resources, and tectonic histories of different regions of North America, such as the Precambrian shield, Appalachians, and Cordillera. Synthesis of the theories of orogenesis. Three lecture hours per week.
- GLY 541. Advanced Structural Geology (3)** Prerequisite: Structural geology. Origin and analysis of earth structures. Solution of advanced structural problems involving stress, strain, rheology, folding, and fracturing of rocks. Rock mechanics, finite strain, and fabric analysis of deformed rocks. Review of techniques. Directed field or lab problems and examples from literature. Two lecture and two laboratory hours per week.
- GLY 543. (cross-listed with GLY 443) Tectonics (3)** Prerequisites: Structural geology, stratigraphy, petrology. Examination of current ideas and their development as global tectonic theories. Plate tectonic controls on orogeny, orogenic belts, magmatism, sedimentation, and metallogeny of major geologic regions of North America and other areas of the world. Three lecture hours per week.
- GLY 550. Marine Geology (3)** Prerequisite: Consent of instructor. Topography, sediments, structure and geologic history of the marine and estuarine environment. Two lecture and three laboratory hours per week. Field trips.
- GLY 551. Seafloor Mapping (3)** Prerequisite: Permission of instructor. A survey of different methods used to map the seafloor including satellite altimetry, multibeam and sidescan sonar swathmapping. Operation of instruments, survey strategies and techniques to process and interpret data will be explored. Shipboard fieldtrip. Two lecture and three laboratory hours per week.
- GLY 552. Coastal Sedimentary Environments (4)** Prerequisite: Consent of instructor. Sedimentary processes and environments of the world's coastal systems. Emphasis on river deltas, estuaries, bays, salt marshes, barrier islands and associated inlets. Ice-bound as well as rocky coastlines also are examined. Three lecture and three laboratory hours per week. Field trip.
- GLY 555. Coastal Sediment Dynamics (3)** Prerequisites: One year of calculus or physics or consent of the instructor. Theory and application of models used to quantify sediment movement and deposition in the coastal environment. Three lecture hours per week. Field trips.
- GLY 558. Introduction to Coastal Management (4)** Interdisciplinary study of human impacts on coastal environments and organisms. Topics include the physical and biotic setting of worldwide coastal regions, principles of coastal management, and analysis of potential solutions to coastal problems. Three lecture and three laboratory hours each week.
- GLY 560. Integrative Stratigraphy (3)** Prerequisites: Invertebrate paleontology, stratigraphy, petrology. Stratigraphic analysis of the geologic history of North America and parts of other continents. Emphasis on interpreting lithologic assemblages and stratigraphic relations in terms of modern tectonic-depositional models. Two lecture and three laboratory hours per week.
- GLY 561. Coastal Plains Geology (3)** Prerequisites: Invertebrate paleontology, stratigraphy, petrology. Origin and development of Gulf and Atlantic Coastal Plains with emphasis on stratigraphy, structure, geomorphology and tectonic history. Field trips. Three lecture hours per week.

GLY 565. (cross-listed with GLY 465) Introduction to Geophysics (3) Prerequisite: Consent of instructor. Integrated application of geophysical methods to solve environmental and geologic problems. Includes discussion of reflection/refraction seismology, ground penetrating radar and gravity. Two lecture and three laboratory hours each week.

GLY 572. Introduction to Geochemistry (3) Prerequisites: Two semesters of college calculus; mineralogy or inorganic chemistry; or permission of instructor. Investigation of the abundance and distribution of chemical elements in the Earth's crust, mantle, atmosphere, hydrosphere, and biosphere. Introduction to thermodynamics, phase and mineral equilibrium, stable and radiogenic isotopes, and geochronology. Emphasizes the application of geochemical processes to solving geologic and environment problems, with selected examples from field and laboratory studies. Three lecture hours per week.

GLY 573. Isotope Geochemistry (3) Prerequisite: Two semester of college calculus and two semesters of college chemistry. Introduction to the use of radioactive and stable isotopes for studying environmental processes; radioactive decay and the applications of radioisotopes at daily to earth-history timescales; isotopic fractionation, and applications of stable isotopes in modern and paleo-environments. Three lecture hours per week.

GLY 591. Directed Independent Study (1–3)

GLY 592. Topics in Geology (1–4) Prerequisite: Consent of instructor. Advanced special topics in geology through lectures, seminars, and laboratory or field experience.

GLY 595. Seminar (1) Prerequisite: Consent of instructor. Research and discussion of selected topics in Geography and Geology. Oral presentation at a departmental seminar and attendance at selected university seminars required.

GLY 597. Final Project in Geology (3) Permission of Instructor. Focused study of a research topic in the practical application of geology. Topics are selected by the student with appropriate faculty and graduate coordinator approval. Students work with a faculty committee. Written analysis and oral presentation of the project is required.

GLY 598. Internship (3) Prerequisite: Permission of instructor. Participation in field experience with an organization involved in the practice of geology. Students work with a licensed professional geologist focusing on the linkage between course work and practical application. Students complete a final report based on their activities. Final presentation required.

GLY 599. Thesis (1–6)

Course Descriptions for Geography

GGY 520. Fundamentals of Geographic Information Systems (3) Purpose, use, and development of GIS. Theoretical basis for spatial data models and the integration of these data to solve problems. Two lecture and two laboratory hours each week.

GGY 522. (cross-listed with GGY 422) Remote Sensing in Environmental Analysis (3) Prerequisite: Consent of instructor. Use and interpretation of aerial photography and other remote sensing techniques in environmental analysis. The course emphasizes problem identification, digital image analysis, and interpretation of images through laboratory exercises. Three lecture and two laboratory hours each week.

GGY 524. (cross-listed with GGY 424) Geographic Information Systems (3) Prerequisite: GGY 328 or consent of instructor. Advanced theory and application of the use of Geographic Information Systems (GIS), spatial data collection, data structures, data management and relational databases, spatial analysis, and display of geographic information in a computer-based environment. Lectures, demonstrations, and lab exercises. Two lecture and three laboratory hours each week.

GGY 526. (cross-listed with GGY 426) Environmental Geographic Information Systems (3)

Prerequisites: GGY 328 or consent of instructor. Overview of environmental applications of GIS and completion of a GIS project; planning a GIS project; development and analysis of the data, and oral and written presentation of the results. Research topics may include atmospheric studies, oceanographic, hydrology, ecology, biology, resource management, and hazard risk assessments. Two lecture and three laboratory hours each week.

GGY 552. Historical/Cultural Geography (3) Prerequisite: Permission of instructor. Study of the evolution of natural environments and cultural landscapes; spatial diffusion; settlement patterns; and the material culture including vernacular architecture. Focus will be on North America, with consideration of European antecedents. A seminar type course in which students are responsible for an intensive research project. Three lecture hours per week.

GGY 578. (cross-listed with GGY 478) Historic Preservation Planning (3) An applied research course which deals with the procedures employed by federal, state and local agencies in locating, recording, restoring and preserving American architectural resources and material cultural heritage. Subjects examined include survey, documentation, and planning; historic districts; adaptive use; funding; legislation; and organizational roles. Three lecture hours per week.

GGY 591. Directed Independent Study (1-3)

GGY 592. Special Topics in Geography (1-4) Prerequisite: Consent of instructor. Advanced special topics in geography through lecture, seminar, and laboratory or field experience. More than one topic may be taken for credit.

C. Transfer of Credit from Another Institution

A maximum of six semester hours of graduate credit may be transferred from another accredited institution. Grades earned on transferred work must be equivalent to a B or better. Under special circumstances, additional credit may be transferred by submission of a petition, endorsed by the Geography and Geology Department chair and dean of the College of Arts and Sciences, to the Graduate School. All transferred courses must be recommended by the dean of the College of Arts and Sciences before consideration by the graduate dean. Official transcripts are required. The transferred courses must have been taken within the allowed time frame for completion of the graduate degree. Graduate courses taken while enrolled as an undergraduate at UNCW are not automatically transferred upon acceptance into the graduate program. However, if these courses were taken during the last 15 hours of the undergraduate career with the approval of the department chair, the dean of the college, and the dean of the Graduate School, the student may initiate a petition for transfer of credit. A maximum of 10 hours of these courses may be applied towards the graduate degree.

D. Adding, Dropping and Withdrawing

The Calendar of Events listed in the UNCW Graduate Catalogue and the Schedule of Classes for each semester specifies the time periods allotted for adding, dropping or general registration of individual classes. Please note that every course for which a graduate student is enrolled must be completed or officially dropped. Schedule Revision Cards for dropping or adding a course are available from the graduate coordinator. For those students who have not pre-registered, the required form for registering is the regular registration form (not the drop/add card). Graduate students wishing to withdraw from the University or to drop their only course must do so in the office of the Graduate School.

E. Switching Between Tracks

Students may switch from non-thesis to thesis track, or thesis to non-thesis track up until the end of their second semester of enrollment or completion of no more than 18 credits of coursework in the program. To initiate the processing of switching, the student must first submit a written request to the graduate coordinator of his/her current track. Upon approval from the graduate coordinator, students switching from the non-thesis to thesis track must have a faculty advisor identified and an approved prospectus submitted by the end of the third semester of course work (completion of no more than 24 credits). Students cannot register for thesis credits until an approved prospectus has been submitted. The oral comprehensive exam must be scheduled during the third semester of course work for the student to remain in good standing and prior to registering for thesis credits.

F. Grading and Retention

1. Grading

The University of North Carolina at Wilmington uses the quality point system and semester hour credit for calculating student achievement. Plus (+) or minus (-) grades may be awarded at the discretion of the faculty. Only courses approved by the Graduate Council will be eligible for S/U grading. Up to six credit hours of S/U may be applied to any degree program. Grade symbols and equivalent quality points used are the following:

Grade	Grade Point	
A	4.00	Excellence
A-	3.67	
B+	3.33	
B	3.00	Completely satisfactory
B-	2.67	
C+	2.33	
C	2.00	Minimally acceptable
F	0	Failure
S	Satisfactory progress (thesis)	
U	Unsatisfactory progress (thesis)	
I	Work incomplete	
W	Withdraw passing	

*Earned grade points = quality points

The grade point ratio is determined by dividing the accumulated number of grade points earned (quality points) by the accumulated number of quality hours.

For thesis work, a grade of S is recorded for satisfactory performance. When the thesis is complete, a letter grade will be assigned for the final semester of thesis work. In exceptional circumstances, a graduate student may need to drop a course and is expected to receive a WP (withdrawn passing) at the time of leaving the class. A WF (withdrawn failing) is recorded as an F on the transcript. A recorded grade of I signifies that the course work was satisfactory but not completed by the end of the term. An incomplete or I must be changed to a letter grade within a year; if the instructor sets a final date of less than one year, the student and the dean of the Graduate School must be notified in writing. If the student does not complete the requirements for the course within a year, the incomplete grade (I) is automatically changed to an F.

2. Appeals

Any student considering an appeal on a final course grade should understand that each faculty member has the academic freedom and responsibility to determine grades according to any method chosen by the faculty member that is professionally acceptable, communicated to everyone in the class, and applied to all students equally. However, discriminatory, arbitrary, or capricious academic evaluation by a faculty member is a violation of a student's rights and is the only valid ground for a final course grade appeal. Such an appeal must be made no later than the last day of the next succeeding regular semester. Grades not appealed by that time become permanent.

[NOTE: These procedures are not to be used in cases involving student academic dishonesty or in cases where a student disputes the final course grade for reasons other than alleged discriminatory, arbitrary, or capricious academic evaluation by a faculty member].

Any student who contests a final course grade under this procedure shall first attempt to resolve the matter with the instructor involved. Failing to reach a satisfactory resolution, the student may appeal the grade in accordance with the steps outlined below.

1. The student shall present the appeal in writing to the chair of the department within which the contested grade was awarded. The written statement shall limit itself to a factual description of evidence pertaining to the valid ground for the appeal and documentation of all attempts to reach resolution. By conferring with the student and the instructor, the chair will seek resolution by mutual agreement. The chair will provide a written statement of the results of this effort to the faculty member and student.
2. Failing to resolve the issue in Step 1, the student shall present the written appeal and all documentation of attempts to reach resolution to the dean of the college or school, or director in the case of the School of Nursing, in which the protested grade was awarded. The dean or director, by conferring with the student and the instructor, will seek resolution by mutual agreement. The dean or director will provide a written statement of the results of this effort to the chair, faculty member, and student.
3. If Step 2 fails to produce a resolution, the student shall provide a written appeal request to the associate dean of the graduate school. The written statement shall limit itself to a factual description of evidence pertaining to the valid ground for the appeal, documentation of all attempts to reach resolution, and the student's desired outcome, prior to taking the final step of appealing the issue to the graduate school's Grade Appeals Committee.
4. The associate dean of the graduate school will convene and chair meetings of the Grade Appeals Committee, which consists of faculty members appointed by the dean of the graduate school. The committee will make recommendations to the dean of the graduate school following the hearing proceedings.
5. If the dean affirms the instructor's decision, he/she will notify the faculty member, student, chair, and appropriate college or school dean or director in writing. The decision made by the dean is a final university decision and may not be appealed further.
6. If the dean affirms the student's appeal, he/she shall prescribe the method by which the student will be reevaluated and communicate that to the faculty member, student, chair, and appropriate college or school dean or director in writing. If the reevaluation results in a grade change, the established Course Grade Change procedure will be followed. The grade resulting from the reevaluation is a final university decision and may not be appealed further.

3. Policy on Repeating Courses

A student who has received a grade of C may repeat that course once. Both the first and second grade will count in determining the grade point average, but only the initial hours will count toward degree requirements.

4. Retention

Three grades of C or one grade of F results in your dismissal from the graduate program. Further, if you fall below a 3.0 GPA any time, you are placed on academic probation and have three subsequent courses to bring your GPA up to at least 3.0. In addition, you must have at least 3.0 GPA to begin any program-specific comprehensive examination and/or thesis work.

You must have no less than a 3.0 GPA on all graduate-level courses. Grades of A, B, C, F, S, and W are permanent grades and can be changed only by the dean of the Graduate School in cases of arithmetical or clerical error or as a result of protest of grade. Graduate students in good standing (maintaining satisfactory grades and making substantial progress toward the completion of their degree) may be continuously eligible to enroll for a period up to five (5) years of the date of their first registration for graduate study at UNCW. When extenuating circumstances warrant, an extension of time limit for completing a graduate program may be granted to a student upon his or her petition to the dean of the Graduate School.

5. Minimum Competency Requirement

Individual graduate programs may designate certain courses as requiring minimum competence of B. Any student receiving a C in that course must repeat it and receive a grade of B or better. Such courses may be repeated only once, and failure to receive a B or better grade on the repetition will result in dismissal from the graduate program. Both the initial C and subsequent grade will count in determining the GPA, but only the initial hours will count toward degree requirements.

6. Course Load and Full-time Status

Graduate students are not permitted to enroll for more than 15 hours in any one semester. Normally, teaching and research assistants do not register for more than nine hours in any semester. Full-time status for graduate students is defined by current enrollment of nine (9) or more hours per semester or for six (4) hours per summer term. However, because of the academic character of graduate school, UNC Wilmington recognizes that other activities may be appropriate to, and the equivalent of, full-time work toward completion of your graduate program. These activities may include appointment as a teaching or research assistant and/or active work associated with the preparation of a thesis.

For purposes of defining full-time status during a regular term on the basis of your activities, you must meet one of the following (or combination thereof):

- 1) holds a full (20 hour) teaching or research assistantship and is enrolled in five or more hours,
- 2) holds a partial (less than 20 hours) teaching or research assistantship and is enrolled for seven or more hours,
- 3) is enrolled for one to three hours of research (BIO 698), thesis (599) or dissertation (BIO 699) work,
- 4) is enrolled in GRC 600 (continuous enrollment).

Half-time status begins with at least four and a half (4.5) credit hours. A student may not enroll beyond

two terms of continuous enrollment (GRC 600). Summer counts as one regular term.

A graduate student in good standing, who is pre-registered for the following fall semester, is not required to enroll during the summer to maintain status as a graduate student and retain privileges for access to campus facilities. Full-time status, however, requires a minimum enrollment of four credit hours. A student may also be considered full-time when enrolled for less than four hours if the student:

- 1) holds a full (20 hour) teaching or research assistantship and is enrolled in two or more hours,
- 2) holds a partial (less than 20 hours) teaching or research assistantship and is enrolled for three or more hours,
- 3) is enrolled for one to three hours of research (BIO 698), thesis (599) or dissertation (BIO 699) work,
- 4) is enrolled in GRC 600 (continuous enrollment).

One to three hours of thesis work may also qualify the student as half-time if approved in writing by the graduate dean. A student may not enroll beyond two terms of continuous enrollment (GRC 600). Summer counts as one regular term.

Recognition of these activities does not imply credit hours for determining official registration data or generation of tuition and fees, but instead reflect other ways students contribute to the educational program at UNCW. For teaching and research assistants, no minimum course load for each semester has been defined.

H. Re-enrollment

Any student who leaves the university and is not enrolled during either the fall or spring semester must apply for readmission on the appropriate form available in the Graduate School. Effective on Nov. 1, 2009, the application fee procedure for students who had already paid an application fee for a UNCW graduate program has changed. For example, a student who completed a M.A.L.S. degree and wanted to then enroll in the M.I.T. program would not have been charged a second application fee. This will no longer be the case. Students applying to change degree programs (different degrees, not different concentrations), students who have left and are applying to re-enroll, students who were denied admission and are re-applying will all be charged another application fee.

I. Deficiencies

During the first week in the program new students will be required to take a comprehensive entrance exam to test proficiency in fundamental geologic concepts. A score below 70% on this exam is considered deficient and requires that the student take and pass (score of 70%) all exams, including the final, in a GLY101 (physical geology) lecture section. In addition, your graduate advisor and your graduate committee will evaluate your undergraduate program when you enter the Master of Science program and may require that additional deficiencies be remedied. A deficiency may be satisfied by taking one or more undergraduate courses prior to acceptance to candidacy for the master's degree. In such cases, no graduate credit will be given. Normally, a minimum grade of B must be achieved.

J. Departmental Seminars

The Geography and Geology Department offers seminars by scientists and students. These seminars are designed to provide intellectual stimulation for students and faculty, and you are required to attend.

K. The Thesis

1. Thesis Credit

Every graduate student must register for a minimum of three credit hours of thesis. A maximum of six credit hours may be used toward the master's degree. Because course work is usually taken during the initial two to three semesters of graduate study, students often elect to register for thesis credit during the final semesters even though research may have been initiated soon after admission. **Students may not enroll for thesis hours until they have successfully passed the comprehensive examination and submitted an approved thesis prospectus.**

For students who have completed all of their course work and are only involved in writing their thesis, the University provides for registration of GRC600, Continuous Enrollment, thereby fulfilling the enrollment status and guaranteeing use of the library, computing facilities, etc. Students registering for GRC600 must have their registration approved by the Graduate School. Also note that it may be less expensive to enroll for one semester hour of thesis credit if you are applying for financial aid. You receive official credit for a maximum of six semester hours of thesis work; any hours beyond six are not considered as meeting any requirements for the degree. Students must be enrolled during the semester in which the degree is awarded.

2. Philosophy and Guidelines

Although course work is important to graduate education at the master's level, research and the resultant thesis are unique experiences of graduate study. Consequently, the design of a realistic and well-defined research project should be considered of highest priority by a thesis advisor and student. A detailed student prospectus facilitates this goal by outlining necessary steps in reviewing pertinent literature and in writing a narrative of the scope of the thesis. This prospectus is used by the student and graduate committee for evaluating and overseeing the research progress. **To remain in good standing, a graduate student must have an approved prospectus on file by the beginning of their third semester, or before undertaking additional coursework after the completion of 15 hours.**

Directed research provides an optimal opportunity to make a contribution to science, and to learn firsthand the objectives, hypotheses, methodologies, and data analyses and interpretations used in research. The latter may be of most importance. Graduate students often lack experience in conducting directed or original research. Therefore, the thesis advisor must assume an active role as teacher and advisor in the design and completion of student research.

Writing of a thesis involves presentation of research findings and evaluation of these findings relative to work done by others. Incorporation of pertinent existing knowledge relative to the thesis research is most important and usually involves frequent and careful citing of work published by others. Such citations should conform to the principles set forth in the U.S. Geological Survey's "Suggestions to Authors" and/or the journal in which the student expects to publish the thesis.

The process of writing your thesis usually takes much longer than you first anticipate. Finishing the thesis prospectus within the first or second semester and beginning the research project early are both key elements to finishing the degree within four or five semesters. Passing the qualifying examination for degree candidacy and completion of the required course work also need to be done in a timely fashion. Beginning your research, finishing data collection, and completing all requirements for the degree except for the thesis within three or four semesters requires a great commitment on your part. Taking the initiative is your responsibility only. Your advisory committee and major advisor are willing to work with you to ensure your completion of the degree.

References to work not yet published are necessary in some instances, and their proper citation within the text can be awkward. These are cited as "Personal Communications" and comprise either oral or written (or both) forms of communication. Your advisor and/or the selected journal style will specify which form (either oral or written) is acceptable for citation as a personal communication.

3. Thesis Format

Graduate School policy endorsed by the department states that the thesis should be in the format of an article ready for submission to a major (of at least regional status) and appropriate geological sciences journal. The journal selected should be one in which there is reasonable expectation that the work might be accepted for publication. Detailed presentations of data should be in the form of appendices and should be sufficient to allow future students access to your data should they need to repeat the work or to make comparisons with newly gathered information. Faculty advisors and advisory committees differ in opinion as to the appropriate length of a thesis. Discussions with your advisor prior to beginning formal research and writing should clarify your mutual understanding of thesis format and how much detail to include.

Detailed guidelines for the preparation and submission of the thesis have been developed by the Graduate School (Appendix A). Follow these guidelines carefully. Before beginning your writing contact the Graduate School to determine if there have been changes since the date on the cover of this handbook. If any questions arise about thesis format discuss them with your advisor or the graduate coordinator.

III. PROCEDURES

A. Graduate Coordinator

The department graduate coordinator oversees the operations of the graduate program within the department. The coordinator is the link between the department and the Graduate School. As your liaison between the department and the Graduate School, the coordinator should be kept apprised of all changes or problems concerning your graduate student career. Feel free to ask any questions of the coordinator concerning procedures or requirements. The graduate coordinator maintains the graduate student records within the department. Pre-registration and registration for all classes is handled by the graduate coordinator.

B. Selection of Graduate Advisor and Graduate Committee

Each student has an individual graduate advisor who serves as the chair of the student's graduate advisory committee. Normally, full-time students are not admitted into the program unless a faculty member consents to serve as their advisor. Part-time students may be admitted without prior consent of an advisor. In such cases, the graduate coordinator serves as interim advisor until an advisor is determined.

Mutual consent between the graduate student and a faculty member in the selection of a graduate advisor is critical to the success of the student's degree program and research. However, after beginning graduate studies, changing interests of the student to another area of research may necessitate selection of a new graduate advisor. A change in advisor should begin as soon as the need arises. The graduate coordinator should be notified immediately so that appropriate changes are incorporated in the student's file and the process is expedited efficiently.

The primary role of the graduate advisor is to assist in the choice of thesis topic and the design of the research program. The graduate advisor also provides guidance during the research project and critically edits the thesis with suggestions for any improvements. The advisor, therefore, must have expertise in the area of student research and usually agrees to advise only those students wishing to pursue a research topic within his or her range of research expertise.

The graduate advisor assists in selecting two other faculty members to serve on the graduate advisory committee. Selection of committee members is normally completed during the first semester in residence and should focus on providing the student with additional expertise in the design and implementation of

thesis research. Any faculty member at UNC Wilmington holding graduate faculty status is eligible if he or she provides the needed expertise. At least two committee members, including the advisor, should be from the Geography and Geology faculty. One other faculty member from another department may be added to the committee, if appropriate, but may not chair the committee. The major advisor submits the names of all committee members to the graduate advisor, who completes a Thesis Committee Appointment form (available on line on the departmental webpage) that is placed in the student's permanent file and distributed to each thesis committee member.

Faculty with adjunct status on this campus may enhance the research of graduate students and, because of their potential guidance and expertise, may serve on graduate committees. However, the services of an off-campus person may be needed on a one-time basis for some graduate student committees. The Graduate School policy governing these appointments is as follows:

- The chair of the student's advisory committee shall submit the nomination, co-signed by the departmental chair, of this person to the Graduate School. The nomination shall include a brief supporting statement about the person's expertise in relation to the student's research. A current curriculum vitae should accompany the nomination.
- Minimum criteria for approval normally shall include possession of an appropriate terminal degree and evidence of current scholarly activity appropriate to the discipline (normally publications in refereed journals).
- Approval rests with the dean of the Graduate School.
- Approval does not allow listing of the person's name in the catalogue nor does it authorize formal involvement with other advisory committees or assignments associated with graduate education. However, the appointee signs the title page of the thesis in the same fashion as other members of the advisory committee.
- Not more than one such person shall serve on a student's advisory committee, and each shall serve in addition to the three regular or adjunct members of the UNCW faculty that normally constitute an advisory committee (i.e., a total of four persons).

Regular members of the advisory committee assist in developing a degree program and must approve the overall course schedule. They also assist with the development of the research proposal and must approve the research project. They are prepared to offer advice and counsel throughout the degree program on any aspect of the program. Each committee member reads, edits, and evaluates the thesis and must approve the final draft.

The advisory committee conducts the oral comprehensive examination. Their evaluation of the student's performance determines whether the student passes or fails.

Careful selection of committee members and maintaining close contact with each member throughout the degree program ensures a smooth progression towards completion of the degree. Keeping the committee members informed of progress on research and writing of the thesis is especially important. When they do not know what is being done, they will assume that nothing is happening.

The relationship among graduate student, advisor, and advisory committee is an unusual and close relationship. Maintaining good working relations with the advisor and committee members should minimize problems in the completion of the thesis project and should result in invaluable assistance to the student. If the relationship becomes too distant, the student will likely lose a great deal of the opportunity to make the most of a master's program.

C. Thesis Prospectus and Program Plan

The most important responsibility of graduate advisors and committee members is the guidance of graduate student course work and research. Failure to monitor these elements may result in considerable strain on the student-thesis advisor-university relationship. In order to promote a firm understanding of student expectations in his/her educational and research program, a prospectus is essential. The graduate student's advisory committee should meet and approve the prospectus and program plan for each graduate student. All parties signify their mutual agreement to the provisional document as outlined above by signing an appropriate form (available online on the departmental webpage). A copy of the document and form will be maintained as a part of each student's permanent record. The prospectus should be completed and filed before beginning the third semester of graduate study. The prospectus for each student should contain the following sections: student program, literature review, research proposal, anticipated budget, and potential sources of funding.

1. Student Program

The student and his or her graduate committee should, by mutual agreement, develop a course sequence for 1 - 2 years based upon projected course offerings. The program should reflect the broad aspects of offerings in geology and should provide some focus concerning the student's specific research interest. The program should reflect the background and preparation of the student; it should remedy any deficiencies. The program should identify required and collateral courses in order that all requirements are met without failure. The program can be used by both student and committee to check the progress of course work. A completed Graduate Degree Plan form (available online on departmental webpage) must be completed and approved by your major advisor and committee members. The form must be approved by the graduate coordinator before filing the original with the Graduate school. Subsequent changes in the degree plan must be approved by the major advisor and the graduate coordinator. A standard form for changes in the degree plan must be filed with the Graduate School (available online on departmental webpage).

2. Literature Review

A review of the pertinent literature concerning a specific research topic mutually agreed upon by student and thesis advisor should be completed. The review should be a demonstration of the student's command of the literature in the intended field. Using conventional or computer-based searching techniques, and/or consultation with a person knowledgeable in the field, the student should review major relevant papers in the area of his/her study. The review should include broad papers in the field of study as well as specific papers related directly to the research topic. The review should present the pertinent information concerning unique approaches or conclusions of the documents considered. The review should identify a problem that the student's research will address. The review can be historical, topical, or a combination of the two. The review should be written in scientific style and include a literature cited section written in the agreed upon format.

3. Research Proposal

A research proposal, or prospectus, written in narrative form, describes the objectives, hypotheses, methodology, and data analyses of the thesis research project. The prospectus may be broad-based in nature, especially if the topic or approach is novel or innovative. The objectives of the study should be clearly stated. Objectives are defined as measurable or demonstrative accomplishments. Hypotheses and anticipated results should be discussed. The prospectus should indicate a time frame for accomplishment of the proposed objective. The prospectus should demonstrate that the objectives can be accomplished in the time frame discussed. The entire document should be considered conditional. The methodology for

accomplishing each objective should be presented in as much detail as possible. The kinds of data to be collected and the method of analysis should be clearly stated. The document should address the significance of the study in light of the literature cited. The prospectus can be used to measure progress and develop a schedule for accomplishments.

4. Anticipated Budget

Expenses for supplies, travel, subsistence, library assistance, and other costs related to the thesis research should be estimated and listed as a tentative budget. In many cases, this can serve as a catalyst in identifying potential sources for funding. In all cases, establishing a budget helps to focus on often overlooked but important aspects of research.

5. Potential Sources of Funding

This section is an extension of the budget and helps to identify those agencies capable of offering fiscal support of the research project.

D. The Comprehensive Examination

Every graduate student must pass a comprehensive examination covering his or her field of study prior to being elevated to status as a degree candidate. In the thesis option, this exam is oral and should be taken by students who have completed the majority of their course work. This exam must be taken prior to registering for thesis hours. In the non-thesis option, the comprehensive examination is written and is taken after the successful completion of all required core coursework with the exception of GLY597 and GLY598.

The comprehensive examinations are designed to provide the student with the opportunity to demonstrate his or her knowledge of course work completed at The University of North Carolina Wilmington or transfer work accepted by the university for graduate credit. The questions should reflect one of two approaches: In one type, the question should demand that the student's response demonstrate a synthetic or synoptic view of data, concepts, ideas, topics, or areas within the field of geology. The second type should require analysis of premises or knowledge claims of geology. In this way, both inductive and deductive logical thought processes and the analytic and synthetic capabilities of the student can be assessed. Questions that address specific geological topics that the student should have in clear focus will be considered in developing the examination; however, the student's total geologic educational experience will not be neglected. Questions that explore a student's knowledge in the area of general geology are included. A balance between broad, overview and narrow, detailed responses will constitute the examination format.

For students pursuing the thesis option, the graduate student should indicate his or her desire to complete the examination by submitting a written notice of intent to the graduate coordinator at least 15 days prior to the date of the examination. The graduate coordinator will, in turn, notify the chair of the student's advisory committee. The graduate coordinator, in consultation with the graduate student, is responsible for determining a mutually agreeable time for administration of the comprehensive examination. The chair of the student's committee is responsible for notifying committee members of the student's intent to take the examination. The examination is administered by the student's advisory committee members. Although no time limit is established for the oral comprehensive examination, normally the examination will last about two hours. In the non-thesis option, the written examination will be administered at the end of each semester. The date of the exam will be distributed to students during the first two weeks of the semester in which the exam is scheduled.

A student passes the examination only on approval by at least two-thirds of the members of the examining committee. The decision of the committee is final. The appropriate form that reports the results of the exam must be signed by the advisory committee members at the time of the examination (available online on the departmental webpage). The chair of the advisory committee returns the completed form to the graduate coordinator. Upon receipt of the completed form, the graduate coordinator notifies the dean of the Graduate School in writing of the results (form available online on the departmental webpage). A copy of the form sent to the dean of the Graduate School is given to student and a copy is placed in his or her departmental file.

Any graduate student failing the oral examination may take the examination again after three months have elapsed. Any graduate student failing the written examination may take the exam again in the following semester. No student may take the examination a third time without approval of the University Graduate Council.

Students are encouraged to complete the examination as early as possible as thesis hours may not be undertaken (if applicable) until the oral exam has been successfully completed.

E. Admission to Candidacy and Application for Graduation

A student shall advance to candidacy for the master's degree upon successful completion of all deficiencies, the thesis prospectus, the qualifying examination and all course work excluding thesis hours. The student applies for candidacy by filing an application for graduation. Applications for graduation are obtained from the Graduate School upon payment of the graduation fee. Semester deadlines for submittal of these applications are published annually in the University Calendar of Events. Normally, the application deadline is the last day of the semester preceding the semester in which the student wishes to graduate. Any student failing to meet the particular graduation date for which they applied must contact the Graduate School to change the graduation date.

F. Submission and Oral Defense of Thesis

Each student is required to defend his or her thesis orally to the graduate committee. This oral defense will allow the committee to question the student on all phases of the research and the written thesis. This defense may be scheduled as soon as the student has completed the research and has prepared the final draft of the thesis. At least 30 days before the student wishes to schedule the defense, a request should be submitted to the thesis advisor. The following are guidelines for scheduling the oral defense of the thesis and submitting the final copies of the thesis to the Graduate School:

1. After a thesis has been approved by the student's advisory committee, one (1) copy of the entire work (with all corrections requested by your advisor and committee members incorporated) printed on low quality paper should be submitted to the Graduate School for format approval. The thesis copy must be accompanied by the thesis Format Approval Sheet, which is available on the Graduate School web page (http://www.uncw.edu/grad%5Finfo/documents/pdf_format_approval_sheet_int_new.pdf). Theses will not be reviewed unless accompanied by a signed form. Make sure a name, address, and local phone number of a contact person — usually the student or his/her advisor — are included with the submissions.
2. When the thesis has been reviewed, the contact person will be advised to pick up the work at the Graduate School. Please allow at least three (3) working days for the review process; adjust the schedule of events accordingly to meet all deadlines published on the graduate school web page. If the thesis was not approved, return one copy of the revised thesis, incorporating the Dean's editorial comments (if any) to the graduate school. You will then be advised as to whether a defense can be scheduled.

3. After the thesis draft has been approved for format, the student will be advised to schedule a defense date. The date should be selected in consultation with the thesis advisor and all committee members. After a date is agreed on, the student must: 1) schedule a room for the public seminar and private defense with the GAG secretary; and 2) submit a Notification of Oral Defense form (available online on the departmental webpage) and one copy of the thesis abstract to the graduate school **at least 10 days before the proposed defense date.**

4. **The student must submit a complete copy of the final draft thesis to each committee member at least 10 (preferably 15) working days before the scheduled defense.** The defense copy of the thesis need not be done on high quality paper. Figures and tables, however, should be of finished quality. Each committee member will study and edit the thesis prior to the defense. At the conclusion of the defense, the student receives these copies of the thesis, along with each member's suggestions for changes. The student will usually be notified that he/she has either passed or failed the defense after the committee has had an opportunity to deliberate on both the student's oral presentation and on the condition of the thesis. Following the decision, the committee shall complete a Results of Thesis Defense form (available online on the departmental webpage) and submit it to the graduate coordinator. The graduate coordinator will place the original in the student's departmental file and give a copy to the student.

The format of the defense of the thesis involves a public presentation of the results of the thesis research followed by a period of questioning of the student by his/her advisory committee. Normally, the examination by the advisory committee immediately follows the public presentation; however, the public presentation may be scheduled to precede the examination by up to one week, if the student and advisor agree. When this is done, the date of examination by the graduate committee is considered the formal date of the defense regarding the specified time frame relative to graduation.

5. Assuming the oral defense is successful, the student should make any changes or corrections requested by the committee and prepare final copies for submission to the Graduate School. The Graduate School requires that each student submit **three** copies of his/her thesis. Each copy is to be on white, 8.5 x 11", 20 or 24 lb., 100% cotton bond paper. The Copy Center on campus stocks the paper and can do the copies for you at a reasonable price. Each copy should contain a title page bearing the original signatures of all members of the thesis committee. **All signatures should be made using black ink.** The three copies, when signed by the Graduate Dean, will be taken by staff in the Graduate School to the library for binding. These will be the official copies of the thesis, two of which will be maintained by the library, and one by Department of Geography and Geology. Students are responsible for assembling pages in the correct sequences.

The deadline for completion of the thesis requirement (i.e., thesis in library, ready for binding) shall be without exception the last day of final exams in the semester in which the student intends to graduate. If that deadline is not met, graduation will be moved forward one semester (assuming no other requirement remains unfulfilled).

Students usually wish to have at least one personal, bound copy of their work. Students wishing to have personal copies bound must contact a professional bindery. UNCW has an agreement with Southeast Library Bindery in Greensboro, the firm that has been doing the bulk of the binding of UNCW theses. The bindery price includes the choice of color for the cover, writing on the spine, and shipping and handling from the company back to UNCW. Any imprinting done on the front cover will be at additional cost. If a group of students can submit 25 or more theses as a group (these can be a combination of multiple authors from multiple departments, the bindery will apply a reduced "group" fee. Please contact the Graduate School for more details

G. Graduation

You may graduate in August, December or May. If you graduate in August or December, your diploma will be mailed to you about two (2) months after graduation. All students graduating within an academic year are invited to participate in the Commencement exercise in May and will receive their diplomas then. May graduates are expected to participate in the Commencement exercise. All students participating in the Commencement exercise must order academic regalia. Students will be notified as to this schedule.

IV. GENERAL DEPARTMENTAL PROCEDURES

The Geography and Geology department office staff will provide information and assist graduate students toward a successful course of study. Below are general procedures that specifically affect graduate students. For additional information on general office procedures check with office staff. If in doubt about anything consult the graduate coordinator.

A. Contracts for Teaching Assistants

Contracts are in effect from approximately mid-August until mid-May (generally corresponding with May commencement). Teaching assistants are expected to be available for duty within the department during this time period. Please inform the graduate coordinator if you must be away from campus during this time period for any significant length of time. **For each semester, all teaching assistants must be available for work one week prior to the beginning of classes and through finals period. Arrival delays or early departures must be approved by the Department Chair.**

Effective in Fall 2010, all graduate students must sign the Graduate Assistantship Appointment Agreement prior to being assigned any teaching duties. This document sets forth the expectations and terms and conditions between the graduate student assistant and the University of North Carolina Wilmington (UNCW). All terms and conditions must be satisfied or termination of the appointment may occur as well as possible denial of any future appointments.

B. Official Method of Communication

The University of North Carolina Wilmington regards e-mail as an official method of communication with students, staff and faculty. The UNCW e-mail address is the official address for faculty, staff and student electronic communications. Faculty, staff and students assume full responsibility for the decision to forward e-mail and any failure to receive e-mail communications due to an alternative e-mail service does not necessarily constitute a defense for failure to respond. While e-mail is an official method of communication, it is not the only official method of communication and does not exclude alternate methods such as written or oral communications. All members of the university community must maintain good e-mail management habits and adhere to the standards of responsible use specified in the UNCW Responsible Use of Electronic Resources Policy <http://www/uncw.edu/sp.admproc/Its100.htm> if the institution is to maintain a quality, collaborative computing environment.

C. Telephone Service

Telephone service, specifically for graduate students, is provided in room 209 in DeLoach Hall. This phone is for campus and local calls only. Two courtesy telephones are available in the corridors of both floors of DeLoach Hall. Telephone messages received by the office staff will be placed in the student's mailbox. Students should check mailboxes at least once or twice a day for such messages and for other

information. Office staff has neither the time nor responsibility for tracking down each graduate student for each message.

D. Office Space

Each full-time graduate student, teaching assistant, or research assistant is provided a small office space (pending availability) where materials may be stored and where students may study and work. The graduate coordinator makes these office assignments in consultation with the department chair and notifies graduate students of the assigned locations.

E. Departmental Keys

All graduate students are given a key to one of the outside doors of DeLoach Hall and a key for the laboratories and classrooms. In addition, teaching assistants are issued a key for their assigned office. Additional requests for keys are initiated in the departmental office. Students should consult with their advisor or department chair to determine the specific keys needed. The department chair issues the appropriate request to the Physical Plant to have keys made. The student will be notified when the keys are ready. All keys must be returned to UNC Wilmington upon completion of the M.S. degree or withdrawal from the University. The Center for Marine Science (CMS) keys are assigned by Ms. Kelly Child in the CMS front office.

F. Clerical Support and Records

Limited clerical assistance is available to graduate students. The departmental secretaries may type letters related to University business and manuscripts which students plan to submit for publication. Departmental secretaries do not type class reports, theses, personal correspondence or laboratories for graduate students. Give the secretaries at least two working days advance notice for each project.

The graduate coordinator maintains the graduate student records. All questions concerning the student's status should be directed to the graduate coordinator or the department chair.

G. Use of Departmental Equipment

Most of the equipment in the research and teaching laboratories is university owned. It is, however, usually assigned to a faculty member for use in particular courses and research programs. Often the equipment requires considerable skill and care during use to avoid damage that may be costly to repair and which may render the item unusable while repairs are made. Graduate students, therefore, should never use a piece of equipment without first requesting its use from the faculty member in charge. If it is not clear which faculty member is in charge, see the department chair. Generally, such use will be granted if the item is not in use and the responsible faculty member is convinced that the student knows how to use the equipment properly and will give the item of equipment proper care during its use. There may be times when equipment is in heavy use and will not be available, and there may be certain items which faculty will not allow others to use. If a project is being planned that may require such items of equipment, discuss their lack of availability with the department chair. There may be other alternatives to obtain the use of such necessary equipment or the project may have to be reconsidered.

H. Building, Room and Laboratory Security and Safety

Graduate students are expected to assist the faculty in maintaining building security. It is the responsibility of any graduate student who is working in a laboratory during off hours to leave the room secure with lights off and doors locked. The outside building doors of DeLoach Hall are now electronically keyed (open with your UNCW ID card) and should not be "defeated" by bracing them open with any type of doorstop. If you find the door braced open, please close it properly.

Undergraduate students are usually not permitted in the building on weekends unless under the direct supervision of a faculty member or assigned access through the department office.

A graduate student should be prepared to deal with emergencies as effectively as possible. (1) Locate fire extinguishers, fire blankets, exit, and emergency lights. (2) In any lab where you will be teaching or working, locate the nearest first-aid kit, eyewash station, and shower. (3) If a student is working in the building during off hours and an extreme emergency occurs (fire, chemical spills, injuries, etc.), call the university police at 911 or 962-2222 or Police@uncw.edu; then notify your major advisor. In the event of serious equipment malfunction, please contact your major advisor, the graduate coordinator or the department chair and take such measures as are feasible until help arrives.

I. Boat License

Anyone operating a university vessel must have a university boat certification. Certifications are obtained upon successful completion of a university-sponsored short course in boat handling and water safety. Other boating courses may be acceptable if approved by the boating safety officer. Consult the boating safety officer (Ken Johns; johnsk@uncw.edu) for certification information.

J. Photography and Illustration Preparation

A darkroom is available in DeLoach Hall for developing film and printing photographs; a separate room for photography and preparation of illustrations is adjacent to the darkroom. Appendix B describes photographic techniques and the responsibilities of users of these facilities.

K. Rock Preparation and Thin Section Laboratory

Dr. David E. Blake is the laboratory director. The rock preparation and thin section laboratory is housed in Room 107 of the Academic Support Building, located across the street from the campus police station in the southeast corner of campus. Graduate students who plan to use the laboratory must be certified by the director before operation of any equipment.

The laboratory includes an 18" Covington slab saw, a 10" Felker trim saw, a Highland Park Vi-Bro-Lap, a Redlands 16" Horizontal Lapping Unit, a Buehler Ecomet I polisher/grinder, a Fisher ultrasonic cleaner, a Precision Ovens General Purpose drying oven, a Thermolyne Extra-Capacity hotplate, a Hillquist cut-off saw and grinder, monocular Nikon and Zeiss polarized microscopes, and supplies for production of polished rock slabs and thin sections.

Proper use of the equipment listed above and the procedures for production of polished rock slabs and thin sections are outlined in a laboratory manual provided to the lab user during the certification process by the director. Failure to follow these procedures may result in loss of user privileges.

The following laboratory procedures must be adhered to at all times.

- A sign-in sheet is located next to the laboratory entrance. All users must sign-in before and after using the lab for any purpose, noting all equipment that was used. Any problems with equipment or the lab during your visit must be reported immediately to the director.
- Safety equipment (safety goggles, ear guards, insulated gloves, and aprons) must be worn during use of the equipment. You should not be under the influence of certain prescription drugs while operating the equipment – if in doubt, check with your pharmacist

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- The wall-mounted exhaust fan must be operating during equipment use.
 - Tools in the rock preparation laboratory are for use on equipment in that lab; they should not be used for repairs elsewhere or removed from the laboratory.
 - Storage of rock samples in the laboratory may be arranged with the consent of the director.
 - The laboratory must be kept clean at all times. This means working in specified areas, removing samples from specified areas so that others may use the same equipment, cleaning and protecting equipment as directed in the laboratory manual, wiping floors after saw or lap wheel use, returning samples to assigned storage areas, and sweeping floors after laboratory use.
 - Tobacco products of any type may not be used in the laboratory; food should not be brought into or consumed in the rock lab.

L. Computer Laboratories

The Department of Geography and Geology maintains a computer laboratory for use by graduate and undergraduate students in DL120. The laboratory is equipped with PC computers, which have word-processing, drawing, spreadsheet, and database management programs installed. This laboratory is under the direction of Dr. Liz Hines; therefore, students desiring to use a computer in this room should check with her about the programs that are available for use. The Spatial Analysis Laboratory, under the direction of Dr. Joanne Halls, is also available for graduate student use. Students desiring to use a computer in this lab should make arrangements with Dr. Halls.

M. Time Table for the Degree Program

The master's programs in geology are designed to be completed in four to five semesters. Normally, graduate students enroll for eight to 12 semester hours of course work during each of the first two semesters. Approval of the prospectus normally occurs during the latter part of the second semester. The remaining semester hours of course work and some thesis credit can be scheduled for the third semester. The thesis prospectus should receive approval and be on file before the comprehensive exam and thesis hours can be taken. The remainder of thesis hours can be scheduled for the fourth semester. The Qualifying Oral Examination, taken after all course work is completed, could be scheduled after completion of the second semester. Plan on utilizing at least one complete semester for writing the thesis. The thesis defense could be scheduled for the latter part of the fourth semester. Its planning must be skillful in allowing enough time for thorough review by the advisory committee and in meeting Graduate School deadlines for that semester. Many graduate students are completing their degree in five semesters. Thesis degree program checklist is available online on the departmental webpage.

N. Suggestions for New Teaching Assistants

Listed below are some suggestions to help make your job as a laboratory instructor easier.

- If you have no class conflicts, sit in on the lecture section of the course for which you are a TA. This will help your teaching in several important ways:
- You will be able to cite specific examples from the lecture material and discuss their relationship to subjects being covered in the lab exercises, and vice versa. By doing so, you will help make the course a more integrated, total experience for the student.

-
- Students will ask questions about things that they don't understand from the lecture portion of the course. This way you will be better prepared to answer them.
 - Prepare thoroughly — if you are well prepared, teaching is surprisingly easy and fun. Talk to the lab coordinator if you have questions on any aspect of the laboratory material. You should anticipate sending 5 to 7 hours per week preparing for a laboratory.
 - Make certain you understand all the procedures for submittal of work to the secretaries.
 - Authorized Absences from Examinations. Students who will be absent from a scheduled class meeting or examination because of an official university activity must provide a written excuse in advance. These students shall be given the opportunity by their professor and laboratory instructor to complete any missing assignments or examinations.
 - Inform your students of your office hours and your office location. Be sure to include your office hours and office location on your course syllabus. Post the hours on the outside of your office door and keep them. One frequent complaint of undergraduates is that they can't find the TA during posted office hours.
 - Check with the teaching assistant coordinator and the lecture instructor concerning any responsibilities beyond teaching your labs. TA's are often needed to proctor examinations, grade papers, or assist with other duties at various times throughout the semester. Also discuss grading procedures and record keeping of grades with each lecture instructor.
 - Try to be as informed as possible on various items related to each lab. Don't be afraid to say "I don't know that answer, but check with me in a couple of days so that I have time to find the answer" if presented with a question for which you are unsure of the answer. There are many problems associated with adopting an attitude such as "I can tell them anything because they'll never know and probably don't care to know," or "They'll never know the difference." Keep in mind that many of our undergraduate majors decide on geology as a career after taking physical geology. Experience has demonstrated their consternation and frustration upon discovering in an upper-level class that their physical lab instructor had given them inaccurate information. None of us are experts on everything, and there is nothing wrong in admitting that we don't know the answer. Students should respect you more for wanting to take the time to find correct answers to their questions rather than simply telling them something on the spur of a moment.
 - Complete your grades as soon as possible after the final lab and give a copy to each lecture instructor for inclusion in the final grades. Lecture instructors find it advantageous to have the lab grades before the lecture final exam, which could be scheduled as early as two days after the last day of classes. Please check with each lecture instructor to determine a mutually agreeable deadline for the submission of lab grades.
 - You may find it inadvisable to post your grades, but, if you do, remember that you are not permitted to identify proper names and student identification numbers on the posted list. If you post grades, please give the lecture instructors a copy before you post. You should be available for consultation with the students during the final examination period in case they have questions concerning their lab grade. For your convenience, you may wish to post specific office hours for the final examination period. Do not post grades and immediately "skip town" because this will place unnecessary burdens on the other teaching assistants, faculty and office staff.
 - Make sure your class grade distributions are reasonable and justified. If necessary, check with the student's lecture instructor concerning his or her performance in lecture.

O. Student I.D. and Campus Mail Box

The university requires every student to have a valid I.D. card. The library circulation system also requires use of the I.D. card.

Mailboxes are provided in the departmental office for all degree seeking graduate students. The department receives mail once daily. Mail leaves the departmental office once daily. The university mail should be used for official university business only. Personal mail can be sent at the post office in the University Center.

P. University Parking

All students must obtain a parking decal in order to park on campus.

Q. Graduate Student Information Sheet

You are required to complete and maintain a current graduate student information sheet on the form provided by the Department of Geography and Geology (form available online on departmental web page).

R. Graduate Degree Plan

The graduate degree plan should be completed by the end of your second semester in residence or after the completion of 15 hours. You must submit your Graduate Degree Plan to the Graduate School when you have completed 18 hours of graduate study (form available online on departmental web page).

V. FINANCIAL AID

A. Teaching Assistantships

The Geography and Geology Department offers teaching assistantships to students enrolled in the Geology Graduate Program. Students must apply for these assistantships, and selection will be based on an evaluation of academic records, recommendations, experience, and other relevant criteria. The stipend is currently \$11,000 for each academic year and is paid over 10 months. Each teaching assistant will be assigned duties by the graduate coordinator in consultation with the department chair. Duties will generally involve preparing for and teaching two or three 100 or 200 level laboratories. Other duties may be assigned as appropriate. **Teaching assistants are expected to be on campus and available for work assignments one week before classes begin and to remain on campus through the end of final examinations. Arrival delays or early departures must be approved by the Department Chair.**

Graduate students who are not awarded a teaching assistantship upon admission may be considered for a teaching assistantship as positions become available. The graduate coordinator should be notified of a student's interest in being considered for a teaching assistantship.

Teaching assistantships are awarded for one academic year. Students may normally expect to be continued for a second year if their performance is satisfactory. **Students failing to perform their duties in a satisfactory manner may have their assistantship revoked at any time.** The laboratory coordinator shall evaluate the teaching assistants through in-laboratory observations. The laboratory

coordinator gives one copy of the completed evaluation form to the teaching assistant and places another copy in the student's file.

The graduate coordinator determines the interest of returning graduate students regarding teaching assistantships approximately midway through the semester. Normally, and by departmental rule, teaching assistantships are awarded for a total of four semesters. Exceptions may be granted for an additional semester upon justification. Petitions for extension must be supported by the graduate coordinator, department chair, and dean of the College of Arts and Sciences, prior to submittal to the graduate dean.

The graduate secretary in the Department of Geography and Geology will complete form HR 1.35 to initiate payment to you for your assistantship. **Valid I-9 and W-4 forms must be completed and forwarded to the dean of the Graduate School before you will receive your paycheck.**

Effective in Fall 2010, all graduate students must sign the Graduate Assistantship Appointment Agreement prior to being assigned any teaching duties. This document sets forth the expectations and terms and conditions between the graduate student assistant and the University of North Carolina Wilmington (UNCW). All terms and conditions must be satisfied or termination of the appointment may occur as well as possible denial of any future appointments.

B. Research Assistantships and Fellowships

Research assistantships are offered by the department through individual faculty who have funds available from research grants or contracts. Selection criteria are similar to those for teaching assistantships with emphasis on the suitability of an applicant for a particular research program. Stipends are generally the same as for teaching assistantships. Duties will be assigned by the faculty member administering the research project. Research assistantships are awarded usually for one full academic year. However, under certain circumstances, research assistantships are awarded for a single semester or for a summer session based on the availability of funds.

C. Graduate School Support of Student Travel

One component of the Graduate School's Professional Development Program provides, in part, travel expenses for graduate students who will participate in the agenda of professional conferences. Funds for these activities are limited and dependent upon the availability of funding. The following guidelines thus must be enforced to achieve and maintain the maximum thrust of the program.

1. The Graduate School will provide up to \$400 for a graduate student to participate in a professional conference. Seminars, workshops, and similar meetings normally will be excluded in favor of annual conferences of professional societies.
2. The funds will be allocated expressly for graduate students and not for faculty. Such students must be in good standing, making orderly and satisfactory progress toward completion of their degrees, and enrolled at the time the funds are expended.
3. Preference will be determined, in descending order of importance, as follows:
 - a. Conferences where students present papers as sole or senior authors, and where papers will be printed in full as part of the conference proceedings.
 - b. Conferences where students are junior authors, and where papers will be printed in full as part of the conference proceedings.

c. Conferences where students present papers as sole or senior authors, and where papers will be printed only as abstracts.

d. Conferences where students are junior authors, and where papers will be printed as abstracts. In all cases each student must present a scholarly paper in order to be considered for travel funds.

4. To apply, the student's major professor should submit a letter of application, which clearly indicates (a) one of the above circumstances outlined in 3 above, including the date of the presentation, (b) evidence of the paper's acceptance, (c) a budget covering transportation and per diem, and (d) the source of commitment for the matching funds. Applications must be cosigned by departmental chairs. Application forms are available online on the departmental webpage.

5. Students selected for support will receive an award letter and will be expected to contact Ms. Donna Lamont immediately thereafter regarding the administration of the allocation. In all cases, the funds will be administered on a cost-reimbursement basis.

D. Graduate Student Association Support of Student Travel

The Graduate Student Association provides graduate students with a one-time travel grant to attend professional conferences, workshops, or to complete thesis research. These grants are designed to reward excellence in scholarship and to increase the visibility of the University of North Carolina Wilmington's graduate programs within the academic community. Funds are limited, and all guidelines are strictly enforced. In the event of limited funds, preference will be given to students beyond their first year of graduate study who has not received a travel grant from either the Graduate School or the Graduate Student Association. Students are only eligible to receive one travel grant per year, and, if a student has received a grant for any travel from the Graduate School, he or she is automatically ineligible for this travel grant award. Online forms are available at: <http://student.uncw.edu/org/gsa/forms.htm>.

E. Research Grants and Fellowships

1. Sylvia & B.D. Schwartz Scholarship

This university-wide scholarship provides an award equal to the current in-state tuition and fees for one year. The criteria for the award are: 1) you must be enrolled for at least nine (9) credits during both fall and spring semesters, 2) you must have achieved scores of at least 550 on either the verbal or quantitative section of the Graduate Record Examination and at least 450 on the other section, and 3) you must have attained an undergraduate Grade Point Average of at least 3.25 for at least 60 hours of course work. The Department of Geography and Geology may submit one name for consideration of this award, annually in early spring. See the departmental graduate coordinator for additional information.

2. Champion McDowell Davis Scholarship

Full-time graduate students with at least two full semesters of work to complete before graduation are eligible for the Champion McDowell Davis Scholarship. The Department of Geography and Geology may nominate individuals for this award annually, in mid-spring. The scholarship covers in-state tuition and fees for one year.

3. Graduate School Summer Research Stipend

The Dean of the Graduate School annually awards several stipends for summer research during a period when your teaching or research assistantships may lapse. The awards are competitive and require a research proposal. The current value of this award is \$1,000.

4. Dr. Ralph W. Brauer Fellowship

The Brauer Fellowship was established to assist currently enrolled degree-seeking graduate students in supporting extraordinary projects and activities generally not funded through other means by the university. For more information see the purpose, guidelines, and application form at the following <http://www.uncw.edu/grad%5Finfo/UniversityofNorthCarolinaWilmington-Scholarships.htm>. Applications are due at the beginning of October.

5. Department of Geography and Geology Research Award

The Department of Geography and Geology awards funds for graduate student research. These grants can be used to support any aspect of research, including field work and research-related travel, analyses, photographic processing, thin-section preparation, equipment, and supplies. Individual grants are limited to a maximum of \$500.00. Applications are typically due in late January. Application forms are available online on the departmental webpage

6. Victor Zullo Memorial Research Award

The Victor Zullo Memorial Research Award is a cash award that recognizes outstanding achievement in research by a UNCW Geology student. The selection is made by a faculty committee.

F. Tuition Remissions (out-of-state), Loans, etc.

The Graduate School administers the distribution of tuition remissions for out-of-state students enrolled in all graduate programs. Tuition remissions available on this campus are very limited in quantity and demands among the departments with graduate programs are very high. Eligibility requirements for out-of-state tuition remissions include the graduate student holding an assistantship concurrently. Pending availability of funds, the department's policy on tuition remission for out-of-state graduate students is: if a graduate student receives a tuition remission, then the department will honor the commitment for a maximum of four semesters depending on the satisfactory progress of the student. University policy does not limit tuition remission funds only to teaching students, but the department will attempt to balance availability of the remission funds to both teaching and research assistants. The graduate coordinator and department chair jointly recommend students for tuition remission funds to the Graduate School.

In addition to teaching and research assistantships, state and federal loan and work-study programs are available to qualified graduate students. Specific information concerning details, applications, changes, and additions may be obtained from the Financial Aid Office (962-3177).

The North Carolina Insured Loan Program is available to North Carolina residents who are enrolled for at least nine hours in graduate studies. Students may borrow up to \$5,000 per academic year from College Foundation, Inc., without family need or income restrictions. These are long-term, low interest loans with repayment beginning six months after graduation (or withdrawal) and extending over a period of up to 10 years. The interest on the loan begins to accrue on initiation of repayment. Application for North Carolina insured loans are made directly to: College Foundation, Inc., 1307 Glenwood Avenue, Raleigh, NC 27605.

Non-resident graduate students may be eligible for similar loans through Federally Insured Student Loan Programs in their home states. These programs have essentially the same eligibility and repayment requirements as the North Carolina Insured Loan Program. Addresses of state agencies offering insured loans can be obtained from the Financial Aid Office.

Graduate students who can demonstrate significant financial need, are enrolled for at least nine hours of course work, and are citizens of the United States may be eligible for the College Work-Study Program. This federally funded program provides a variety of part-time jobs in campus departments and offices on

a schedule compatible with the student's class schedule. The hourly pay is based on the federal minimum wage. Students in this program usually work between 10 and 15 hours per week, depending upon established need. In order to determine eligibility, applicants must complete an institutional application form and a Financial Aid form available from the Financial Aid Office.

Graduate students may also obtain research funding by independently seeking grant or scholarship monies. The Office of Research Services and Sponsored Programs may be able to provide assistance with information on sources of funding and with the preparation of application packages. The Office of Research Services and Sponsored Programs (962-3810) is housed in Hoggard Hall. Also consult with your research advisor and the graduate coordinator concerning sources of outside funding.

G. Residency and Residency Status for Tuition Purposes

Under North Carolina law, legal residence means more than simply living in the state. Specifically it means maintaining a domicile (permanent home of indefinite duration) as opposed to a temporary residence incident to enrollment in a college, university or technical institute of the state. As a starting point, if you have living parents, your domicile is presumed to be that of your parents but may be changed to qualify for in-state tuition if your required legal residence can be demonstrated. Marriage does not prevent you from becoming a legal resident for tuition purposes, nor does marriage ensure that you will become a resident.

To determine whether you can become a legal resident of North Carolina for tuition purposes, you must demonstrate an **intent** to make North Carolina your permanent dwelling place of indefinite duration. These actions should be **undertaken immediately** upon your arrival to campus and North Carolina (preferably within the first month). The following are some more important actions to help attain residency:

- convert your automobile registration to North Carolina
- obtain a North Carolina drivers license (or NC Identification Card from the Driver's license office)
- register to vote in North Carolina and vote when possible
- list your personal property at the New Hanover County Tax Office for taxation-
- file a North Carolina tax return as a resident at the next appropriate time
- convert your banking, club/organization membership, etc., to North Carolina

These actions **begin** the one-year (12-month) waiting period to attain residency.

To become a North Carolina resident you must demonstrate that you are financially independent of your parents or guardian if your parents or guardian are non-residents of North Carolina and demonstrate a visible means of support substantiating the claim of financial independence. If you have not been entirely self-supporting during the last **12 months**, a completed affidavit will be required from your parent(s) to indicate the amount of support provided.

Further and equally important, once you have clearly established the residency intent and financial independence, you must maintain North Carolina residence for **12 months** immediately before the semester the in-state status can be made effective. The **only exceptions** to the required 12-months residency period apply in some, but not all, cases to individuals marrying a North Carolina resident who has maintained residency 12 months or longer, and to individuals whose parents have been North Carolina residents 12 months or longer and who are legal dependents of their parents.

If you desire a residence change, you must complete a Residence and Tuition Status Application and submit it to the dean of the Graduate School. Applications can be obtained from the Graduate School

office and online at <http://www.uncw.edu/grad%5Finfo/UniversityofNorthCarolinaWilmington-GraduateSchool-Residency.htm>. **No status change can be made without submission of this application.** The 12-month residency-waiting period must be completed before the first day of the semester in which in-state residency is being requested. Please note that you must submit your application up to 60 days **before** the start of the semester in which your in-state status can become effective although the entire 12-month residency period may not have been satisfied at the time your application is filed.

In other words, to avoid being billed as an out-of-state resident, you should file for a status change before the tuition bills are due so that the Graduate School will have time to process the application and notify Student Accounts as to your status change. For example, when applying for in-state residency for the fall semester of 2007, students may submit their applications starting June 15, 2007, or 60 days before the semester begins.

A decision on your residency status will be mailed approximately 10 days after being reviewed by the Graduate School. If you are denied North Carolina residency for tuition purposes, an appeal of the decision is possible. At that time, you can, and should, attend to clarify points and to present additional arguments in your favor.

VI. WILLIAM MADISON RANDALL LIBRARY

A. Facilities

The William Madison Randall Library, located in the center of campus, is open over 98 hours per week during the regular academic sessions. The library receives a large number of geological serials. Current periodicals are arranged in alphabetical order on the shelves located on the south side of the first floor. In addition, many full text journals are available online. Previous issues, bound and unbound, are located in the stacks in the northwest corner of the first floor. Students and faculty members are allowed to check out periodicals for a period of up to two days. In addition, copy facilities are available on the first floor at a nominal cost.

It is important for each graduate student to learn the organization of the Library and access to its various components as geology publications are located in several different collections. An important starting point is the Reference Desk where you can read the *Guide to Collections and Services* and its complement *Geology, a Guide to Research* or contact Mr. Peter Fritzler (fritzlerp@uncw.edu) the sciences librarian. In addition, online information about geology resources can be found at: <http://library.uncw.edu/web/research/subjects/earthscience/index.html>.

On-line Catalog (ROC). The Randall Library Online Catalog lists cataloged books, maps, and audiovisual materials. Access to the catalog is through the Randall Library home page: <http://library.uncwil.edu>. You can search in the catalog by subject, author, title, or keyword. All cataloged materials are assigned specific Library of Congress subject headings. A list of these subject headings can be found in the red volumes, or the microfiche edition, of Library of Congress Subject Headings located in the catalog area of the Library.

Call Numbers. Books are arranged by Library of Congress call numbers. Most of the geology materials are located in the QE section. The shelves are located on the south side of the second floor of the Library, but their exact location in the open shelves may vary depending upon the need for reorganization and space requirements. Do not despair, though, because some patient searching should easily locate the QE's.

Periodicals. Periodicals are shelved alphabetically by title. Publications of a society are listed under the name of the society. For example, *Bulletin of the Geological Society of America* is shelved under *Geological Society of America Bulletin*. The On-line catalog also contains information related to periodicals holdings and many of the periodicals are assessable online. Search is by title of each periodical. **Indexes and Abstracts.** Indexes and Abstracts provide access to articles published in periodicals. You can access many electronic databases of indexes and abstracts online at <http://library.uncw.edu/web/research/databases/index.html>. More information pertaining to relevant indexes and abstracts is available online at <http://library.uncw.edu/web/research/subjects/earthscience/databases.html>.

Government Documents. The Documents Collection is located on the second floor of the Library. The staff at the Reference Desk will assist you in locating documents in the collection, and a publication *How to find Government Documents* is available at the Reference Desk. Items from the collection may be checked out at the Circulation Desk. More information is contained in *Geology, a Guide to Research* and online at <http://library.uncw.edu/web/research/subjects/earthscience/index.html>.

Nearly all U.S. Geological Survey Bulletins and Professional Papers are available in the Library. Topographic maps are also in the collection and are arranged in map cases near the Documents Collection. More information is contained in *Geology, a Guide to Research* and online at <http://library.uncw.edu/web/research/subjects/earthscience/index.html>.

B. STAR Program (Student Thesis Assistance @ Randall)

STAR is a one-on-one guidance and support system, with thesis assistance provided by your personal, dedicated librarian. The information professional chosen to work with you has an interest in your particular research until your thesis is back from the bindery.

Your STAR Librarian will:

- teach in-depth searching methods for standard databases
- introduce you to more specific databases relevant to your topic and teach you how to build searches for each interface
- familiarize you with the mediated search process for such databases as Dialog (Science Citation Index and Dissertation Abstracts) and Chem Abstracts
- set up and explain your Ingenta account
- arrange a personal introduction to the Interlibrary Loan Department
- give a physical tour of the relevant sections of the stacks
- purchase such materials as books and microfilm, if needed

For additional information online: <http://library.uncw.edu/web/research/star.html>.

C. Interlibrary Loan (ILL)

The Library provides interlibrary loan services whereby faculty members and students may borrow materials that are not available in the Randall Library collections. Requests can be made online through the ILLiad interlibrary loan and document services:

<http://library.uncw.edu/web/customerservices/interlibraryloan.html>.

VII. INSURANCE

A. Health Insurance

Beginning in Fall 2010, all UNCW students will be required to have health insurance. Those unable to show proof of existing coverage will automatically be enrolled in the university sponsored insurance plan. Details are available on the Abrons Student Health Center website.

UNC Wilmington offers Student Accident and Sickness coverage through Pearce and Pearce Inc. The plan protects students at home, at school, or while traveling, 24 hours a day, for the entire year, including vacation periods. All students attending UNC Wilmington are eligible for participation in this plan.

Application forms and information concerning coverage, exclusions, annual cost, and enrollment dates can be obtained online at http://www.uncw.edu/stuaff/healthservices/shc_studentins.htm or from the Student Health Center on the second floor of Westside Hall. Please note that services and fees for using the Student Health and Wellness Center are subject to change.

B. Liability Insurance

Graduate teaching assistants may take advantage of the Teachers' Liability Insurance offered by the University of North Carolina system through The Travelers Insurance Company. Forms are usually circulated at the beginning of the academic year.

VIII. GEOGRAPHY AND GEOLOGY FACULTY AND STAFF

<u>Name</u>	<u>Position</u>	<u>Email</u>	<u>Phone</u>	<u>Office</u>
Dr. Lewis Abrams	Associate Professor	abramsl@uncw.edu	2350	DL115(C MS)
Dr. Michael Benedetti	Associate Professor	benedettim@uncw.edu	7650	DL220
Dr. David E. Blake	Associate Professor	blaked@uncw.edu	3387	DL221
Dr. Douglas Gamble	Associate Professor	gambled@uncw.edu	3778	DL129
Dr. Eman Ghoneim	Assistant Professor	ghoneime@uncw.edu	2795	DL126
Dr. Nancy Grindlay	Professor	grindlayn@uncw.edu	2352	DL119 (CMS)
Dr. Joanne Halls	Associate Professor	hallsj@uncw.edu	7614	DL125
Dr. William B. Harris	Professor	harrisw@uncw.edu	3492	DL106
Dr. Eric Henry	Associate Professor	henrye@uncw.edu	7622	DL 115B
Dr. M. Elizabeth Hines	Associate Professor	hinese@uncw.edu	3012	DL124
Dr. John R. Huntsman	Associate Professor	huntsmanj@uncw.edu	3499	DL104
Dr. Patricia H. Kelley	Professor	kelley@uncw.edu	7406	DL117 (CMS)
Dr. Richard A. Laws	Professor & Chair	laws@uncw.edu	4125	DL108
Dr. Lynn A. Leonard	Professor	lynnl@uncw.edu	2338	DL115A (CMS)
Ms. Yvonne Marsan	Laboratories Manager	marsany@uncw.edu	7822	DL122
Ms. Catherine F. Morris CPS	Administrative Secretary II	morris@uncw.edu	3736	DL102
Mr. Roger D. Shew	Lecturer	shewr@uncw.edu	7676	DL121
Dr. Michael S. Smith	Professor & Graduate Coordinator	smithms@uncw.edu	3496	DL115C
Ms. Anne Sutter	Office Assistant III	suttera@uncw.edu	3490	DL102
Dr. Paul A. Thayer	Professor (retired)	thayer@uncw.edu	3780	DL107

APPENDIX A. GUIDELINES FOR THESES

The Graduate School has specific format guidelines that must be followed. **All Theses and Dissertations are required to be submitted to the Graduate School in electronic PDF form.** The Electronic Thesis and Dissertation (ETD) Manual is available on the Graduate School web page:

(http://www.uncw.edu/grad_info/thesis_dissertation_information.htm).

Each thesis should include a biographical sketch of the author of the thesis at the end of the thesis. The sketch should be written in the third person and should indicate birthplace, where the author earned the bachelor's degree, professional societies to which the author belongs, and professional activities, particularly writing and research interests of the author. See example below (double space in thesis).

Biographical Sketch

Suzy Q. Student was born in Anytown, North Carolina, on June 17, 1964. In 1985, she graduated from Duke University with a B.S. degree in geology and a minor in chemistry. Her work experiences include those as a Park Ranger at Acadia National Park and as a summer research trainee at Woods Hole Oceanographic Institution. In 1991, she entered the graduate program in geology at the University of North Carolina at Wilmington where she worked under the direction of Dr. Ima Nurd. Ms. Student graduated in May 1993, and will begin working for the U.S. Geological Survey in Tampa, Florida. She intends to pursue her professional interests in the sedimentology of carbonate particles. Ms. Student is a member of the Geological Society of America, Carolina Geological Society and American Association of Petroleum Geologists. Her research thus far has produced two papers in scientific journals.

APPENDIX B. PHOTOGRAPHIC FACILITIES

Please follow these guidelines when using the darkroom:

1. A log book in the darkroom entry must be used for sign-in. This record will be helpful in returning misplaced supplies to their owners and in encouraging adequate clean-up. No supplies or chemicals can be stored in the darkroom. It is periodically inspected, and any chemicals found will be discarded. Users are responsible for cleaning the wet table. Remember that wet chemicals dry white! Flagrant misuse will result in loss of privileges.
2. Faculty members and graduate students may reserving the darkroom by signing up for a particular time beforehand. Undergraduates may use the darkroom, but only with a faculty member's signature and supervision.
3. Graduate students should use their personal budgets and/or major professor's resources to secure photographic supplies..

The department maintains cameras that can be checked out by qualified graduate students and is available to assist with specific problems related to photography for theses or course projects. The cameras can be signed out from the departmental office.

How to Print Pictures

Printing Materials and Procedure:

Dektol developer
Indicator stop bath
Rapid fixer (paper strength)
Hypo clearing agent
Photographic paper (recommend Kodak Polycontrast RC paper)
Polycontrast filters (available in darkroom)

1. Dust negative to be printed with negative brush. After placing negative in enlarger (emulsion side down), focus on easel to desired size. A short exposure time gives less contrast. A smaller aperture with a longer exposure time will give more contrast.
2. Expose a test strip at 5 sec intervals to get an idea of correct exposure time required to allow a 1 min development time without "burning".
3. Place print in developer (Dektol). Full development should take about 2 min. If the image appears too quickly (i.e., 10 sec. or less), the paper is overexposed. If the image does not appear fully after 1.5 min, the paper is under exposed. If the image appears correctly but the contrast is not as desired, try decreasing the lens aperture 1 or 2 stops and increasing the exposure time.
4. Put developed print in stop bath for 30-45 sec.
5. Transfer print to fixer bath. After about 1 min in the fixer, you can turn on the lights, but be sure to fix the print 2-4 min.
6. If using Polycontrast RC paper, wash less than 5 min in running water and hang prints to dry. If using ordinary paper, wash prints 15 min, and you will need to use the print dryer.

Dryer Instructions

1. Turn motor on, adjust temperature to 225° F, adjust speed to 15.
2. Allow drum to heat up before drying prints.
3. **DO NOT DRY PRINTS THAT HAVE NOT BEEN TREATED IN PAKOSOL.** This is done immediately after the washing process described above. Soak in the proper Pakosol solution for 5 min.
4. Place wet prints on moving cloth at bottom, collect as they come out the front. Don't let them go around twice.

NOTE: For glossy prints, put the paper picture up. For mat (textured, non-glossy) prints, put the paper picture down.

5. After all of your prints come through, cut the heat off by the thermostat **and** the switch. Allow the drum to stay on until it has cooled. Only then can you safely turn the motor off by the switch.

CAUTION: Never dry resin coated paper (RC) in the dryer.

Development Process for Plus-X Film

Development Materials and Procedures:

Microdol-x developer
Indicator stop bath
Rapid fixer

1. Develop negatives in undiluted Microdol-x according to the following time/temperature schedule:

Temperature (°F)	65	68	70	72	75
Time (minutes)	8	7	6.5	6	5.5

Gently agitate the tank for 5 sec every 30 sec.

2. Remove developer and add stop bath for 30 sec.
3. Remove stop bath; add undiluted Rapid Fixer (film strength) for 3-4 min. Agitate for 5 sec every 30 sec.
4. Wash negatives for 15-30 min in running water.
5. Rinse in Photo-flo solution for about 30 sec.
6. Hang to dry using weighted clips.

High Contrast 35 mm Film

Development Materials and Procedure:

Kodalith film yields high contrast negatives.
One half strength Dektol
Rapid fixer
Hypo clearing agent

1. Roll film on spindle and put into development tank.
2. Add developer, agitate at 30 sec intervals. Develop for 2 minutes at 68°F.
3. Stop development in water (1 minute) or with stop bath (30 seconds).
4. Add rapid fixer solution for 4 min.
5. Add Hypo clearing agent for 4 min.
6. Remove film from development tank and wash in running water for 20-30 min.
7. Rinse in Photo-flo.

Procedure for Vericolor Slides

Development Materials and Procedure:

Kodak Vericolor film
(Dr. Padgett maintains a supply of filters, and filter holder that are available for graduate students use.)

1. Mount filter frame holder on camera lens and insert desired filter.
2. Turn on lights on Polaroid MP-4 copy stand and turn overhead lights off (also be sure door is closed). MP-4 lights should be set at about 45° angles such that their reflection cannot be seen through the camera viewfinder.

NOTE: Place non-glare glass over copy to hold it flat. Regular glass might cause reflected image of the camera to be visible in your slides.

3. For *blue* slides (wratten 12 + 85B filter combination) the best exposure setting is f/11 for 4 seconds. (This exposure is best regardless of the camera height above the copy). If your camera will not meter a full 4-second exposure you can use f/5.6 for 1 second. Although f/5.6 at 1 second is equivalent to f/11 at 4 seconds, fine lines may not photograph as well as with the longer exposure.

For *orange* slides (wratten #44 filter) best exposure is f/8 for 4 seconds. Color is deep rusty orange and probably does not show up as well as blue slides from the back of a room.

For *green* slides (wratten #34A filter) best exposure is f/5.6 for 4 seconds. Slides are a nice bright green (and better than orange) but still do not show up quite as well as blue.

4. Slide processing. Any one-hour photo shop that offers Kodak C-41 processing will do. Remind the photo shop to save your film cassette for you or they will throw it out.
