University at Buffalo
State University of New York

Department of Geology

Graduate Student Handbook

Revised September 2010

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GENERAL INFORMATION

GEOLOGY LIBRARY COLLECTIONS

The Science and Engineering Library includes the Geology Collection of approximately 20,000 volumes, and a Map Collection of 100,000 sheet maps. The Map Collection includes large-scale topographic maps of the United States, Canada, and other areas of the world. Selected thematic maps of geology, hydrology, gravity, seismology, nautical, and aeronautical charts are also available. Also located in this library are geological journals, books, and monographs. Indices and bibliographies are also housed there, as well as reserve materials requested by the department faculty. Bibliographic instruction is available from the Geology and Map Librarian on the use of the collection and on the method of searching for information in the geological sciences.

Michele Shular, Senior Assistant Librarian
Geology, Geography, & GIS Librarian
Telephone: 645-2947 ext. 223 E-mail: mshular@buffalo.edu

GEOLOGICAL COLLECTIONS

The geological collections are maintained by the department curator, Peter Avery, who is available to assist individuals in the use of these resources. The collections consist of suites of rocks and thin sections from localities world-wide, the Church Mineralogical Collection, and special collections, which include geological structures, meteorites, and other phenomena. Several economic suites are available and others are currently under development. The curator also maintains an inventory of rock and mineral material to support faculty and student research.

PEGRUM LECTURE SERIES

In an effort to familiarize students and faculty with current research by specialists in the varied fields of geology, the Department has frequently scheduled lectures presented by visiting scientists as well as members of this Department.

Attendance and participation in discussion is expected of all graduate students. These lectures are considered a valuable part of the graduate-level educational and professional training in UB geology. With a graduate degree in geology from UB, it is assumed that students have played an active role within the department; attending every lecture is part of the duty of graduate students in this department.

FACILITIES

The Department maintains facilities for advanced study in the geological sciences, including laboratories for: X-ray, geophysical, geochemical, sedimentation, clay mineralogy, petrographic, hydrologic, photogrammetric, volcanology, remote sensing and morphometric analysis. The Department has a PC computer laboratory for image processing and data analysis. Active sponsored research grants include those from NASA, the National Science Foundation, the U.S. Department of Energy, U.S. Environmental Protection Agency, the American Chemical Society, New York State Research and Development Authority, and local industries.

COMPUTER USE

Geology faculty have computing resources dedicated to their research projects that are usually available to graduate students under their direction. A high performance computer laboratory is maintained by the department that offers 24 hour access to 21 PC workstations.

GEOLOGY GRADUATE STUDENT ASSOCIATION (G.G.S.A.)

The Geology Graduate Student Association, comprised of and governed by graduate students in the department, is affiliated with the university-wide Graduate Student Association (G.S.A.). In addition to keeping students posted on departmental and university policies, procedures and events, the organization assists in planning the guest lectures and film series as well as social activities in the department. All graduate students are welcome and urged to participate in the group. Meetings are usually held monthly on Wednesday afternoons. Meeting announcements are made on the announcement board.

FINANCIAL SUPPORT

Research and teaching assistantship appointments are awarded each academic year to qualifying incoming and continuing graduate students on the basis of merit. There are more graduate students registered in the department than there are assistantships; therefore, awards are made on a competitive basis. Eligibility for support is normally limited to full-time students with a Bachelor's of Science degree in geology. ecology or to those who have completed the basic undergraduate courses required for their graduate specialization in this department.

Teaching Assistantship (TAs) are awarded by the Graduate Studies Committee on a competitive basis, based upon transcripts, GRE scores, letters of recommendation and departmental teaching needs. TA appointments generally commence in the Fall semester and are made for the academic year, but occasionally TAs become available in the Spring semester. To be considered for a TA, international students must achieve a score of 55 or greater on the standardized Test of Spoken English (TSE). Students in the MA program are not usually eligible for TAs.

Research assistantships are available through sponsored grants of individual faculty members, often include summer research support, and many carry the eligibility of a tuition scholarship. Applicants for graduate study are automatically considered for these assistantship positions. However, research assistantship awards generally require the student to establish a satisfactory research relationship with the particular faculty member whose grant will provide the funding.

Master's students are supported for a maximum of four (4) semesters. Ph.D. students may receive a maximum of eight (8) semesters of support, including scholarships received while in a Master's program. Students may petition for extensions to these time limits, but they should be aware that, if approved, the scholarship extension is only for up to one (1) credit hour of tuition.

Geology graduate students are also eligible for the prestigious Presidential, Woodburn, Schomberg, ESI and Dean's fellowships, which offer both stipends and tuition scholarships.

Information regarding all financial aid programs can be obtained from the Student Response Center, 232 Capen Hall, Buffalo NY, 14260-1631, Telephone: (716) 645-2450. Or visit the Website: www.src.buffalo.edu

Departmental Regulations

Copy Machine: The copy machine is for official UB business only. Photocopying in connection with TA duties must be made using the password for the specific course. Photocopying for research purpose must be done using the faculty member's password. Passwords are obtained through your course instructor or research faculty member.

Departmental Equipment: All students expecting to use department equipment must be certified either by an instructional technician or the faculty member in charge as to their qualifications. Field equipment is available and can be signed out by contacting the faculty or instructional support technicians.

Home Address and Phone Number: Students are required to inform the department office of current residence address and phone number upon arrival, and any changes that occur thereafter. A forwarding address is required when leaving for a long period of time.

Mailboxes: All graduate students are assigned a mailbox. Often this is the only way of notifying students of important messages. **Check it daily**.

Paychecks: All paychecks must be picked up in the main office each payday. University regulations require that unclaimed checks be returned to Payroll immediately. TA's receive checks every other Wednesday, RA's receive checks every other Friday, and Student Assistants are paid every other Thursday.

Department Copies of Thesis: You are allowed to borrow the department's copy of a thesis or dissertation for a period of thirty (30) days. You must sign the thesis out in the office and return it to the office within 30 days.

Safety Training Seminar: All students participating in laboratory research in our department MUST attend a yearly safety-training seminar that lasts approximately 1 1/2 hours. This training will be coordinated by one of our Instructional Support Technicians.

Computer Accounts: When you first register for classes, University at Buffalo Computer and Information Technology (CIT) supplies you with a computer account that will allow you to use several University computer facilities, such as e-mail, BIRD, SOAR, and access the Internet. For more information visit CIT's website (www.cit.buffalo.edu)

SENS (Science and Engineering Node Services) This computer account is needed for access to the departmental workstations, (which you will need for your classes and labs). You need to go to Rm. 101 in Bell Hall, with your student ID, and request a SENS account. We suggest that you make your SENS account name and password the same as your ACSU account name and password.

IMPORTANT: You will have two e-mail accounts, one for each server (Possibly three, if you have one at home). To avoid missed messages, it is important that you forward your mail to one account.

E-Mail: The University supplies all of your professors and the departments with your e-mail address. **You must check this account daily** or set a forwarding address to an account that is checked daily (Your Internet Service Provider at your residence such as AOL, Adelphia, or Hotmail). The website **to set up a forwarding address** is www.cit.buffalo.edu/mail.

Computer Help: Most computer problems students encounter should be addressed by sending an e-mail to nodehelp@buffalo.edu. For any problems regarding your account, you should send an e-mail to accounts@buffalo.edu.

Keys:

1. Handing out keys.
    a. Keys will be issued to faculty and staff for rooms over which they have been assigned authority.
    b. Keys will be issued to graduate (or, by exception, undergraduate) students only at the written request of faculty and only for rooms over which faculty have authority. Other exceptions may be made by the Department Chair at the request of faculty or staff.
    c. To authorize a student to have a key, faculty must send an e-mail message to Marty listing the student and the room to which keys are to be issued. Only written requests will be honored.
2. Key responsibility.
    a. Each person to whom a key is issued is responsible to maintain control over this key at all times. They may not be loaned, stashed over the door, hidden behind a fire extinguisher, etc. Anyone who violates this policy will be held fiscally accountable for any loss of equipment or personal effects that can be reasonably inferred to have resulted from this violation of department policy.
    b. Lost keys must be reported immediately. The person to whom the key was issued will be responsible to pay the cost to have the corresponding lock changed. Currently this cost is $40 per lock.
3. Returning Keys.

a. Students and research personnel who have graduated, resigned, or been dismissed from their academic programs or research positions must return all issued keys.

b. Students or staff who transfer from one lab to another (such as when students change advisors) must return keys for labs they have left.

c. Lost keys must be replaced by having the lock changed (see 2b above).

d. If a student does not return her or his keys at the time of separation (program completion, resignation, etc.), a check stop will be placed on their record. This check stop will prevent the awarding of their earned degree and issuance of transcripts. The check stop will not be removed until all keys are returned, or all affected locks changed.

TEACHING AND GRADUATE ASSISTANTSHIPS

ASSISTANTSHIP REQUIREMENTS

A number of assistantships are available for students who aid the Department with teaching (TA's) or other duties (GA'S). The Graduate Committee expects students who are supported through the Department to perform their duties diligently and effectively and to maintain a grade average of B or higher. Renewal of assistantships is not automatic, and an assistantship may be terminated during the year if a student does not satisfactorily meet these criteria. The Graduate Committee reviews the performance of all teaching assistants during and at the end of each semester. The Graduate Committee will make renewal awards in April on the basis of academic and past performance.

All students who indicate a desire to be a Teaching Assistant will be considered by the Graduate Committee. The assistantships are based on the student's academic performance, GRE scores and letters of recommendations (TOEFL scores will be considered for international students).

The State of New York expects all students holding a normal full-time appointment to devote twenty (20) hours per week to their assistantship duties. Work assignments are variable and may consist of teaching laboratory sections or assisting in lectures (e.g., preparing and grading exams, preparing materials, and other duties assigned by the instructor or his/her representative). Departmental work assignments may include drafting, map room, or curatorial duties, etc. Some assistants may be assigned to a particular professor to aid him/her in various phases of his/her course preparation, etc. Any one or a combination of such duties may be assigned.

INTERNATIONAL STUDENTS

To be considered for a teaching assistantship, international students must be unconditionally qualified to teach in a classroom by the Center for Teaching and Learning Resources. This usually means passing a SPEAK test with a score of 55 or better. For more information contact the CTLR at 716-645-7788 or ctlr@buffalo.edu.

BEGINNING-OF-SEMESTER DUTIES

You must have the lab(s) organized prior to the beginning of the semester. <u>You are expected to arrive one week prior to the first day of class each semester.</u> This will allow you sufficient time for "settling in" and taking care of teaching preparations. If unable to do so, you must make prior arrangements with the Director of Graduate Studies.

TEACHING ASSISTANT WORKSHOP

The Graduate School offers a skills workshop to assist graduate students to develop and enrich their teaching and learning skills. All teaching assistants are required to attend the workshop prior to the start of their teaching duties, unless formally excused in writing by the Director of Graduate Studies. Students who begin their assistantship in the spring semester will have to attend the next available workshop, prior to the beginning of the fall semester.

END-OF-SEMESTER DUTIES

At the end of the semester, you are required to clean and organize lab materials, report any materials that need restocking to the course professor, and perform other departmental tasks. Once these duties are completed, and your supervisor and the Director of Graduate Studies notifies you that the assignment is complete, your duties as a Teaching Assistant are completed for the semester.

ADDITIONAL WORK POLICY

In order to accommodate the additional workload that occasionally arises, especially in large enrollment courses, TA/GA's with less demanding work schedules are placed on a list by the Director of Graduate Studies. This list forms the "pool" from which additional help is drawn when needed.

In order to ensure a fair distribution when this additional work occurs, the department's policy is as follows:

1. If the student is assigned to a specific course, all requests for work not connected to that course, including proctoring of exams outside that course, will be cleared through the Director of Graduate Studies in conjunction with your supervisor. This will help to insure that undue extra duty does not occur.

2. Whenever possible the student will be informed of the required additional work at least one week in advance. Depending on the circumstances, however, this may not always be possible.

3. The student's exams and research will be taken into consideration, but exemption from extra duties for these reasons must be supported by your supervisor.

TUITION SCHOLARSHIPS

Tuition scholarships are granted separately from stipends. Students enrolled in the masters program with stipend support are eligible for tuition waivers to cover nine (9) semester hours for up to four (4) semesters. Students enrolled in the Ph.D. program with (stipend) support are eligible for tuition waivers to cover nine (9) semester hours for up to eight (8) semesters. Coverage of additional credit beyond the nine (9) credit hour limit must be approved through the College of Arts and Sciences Dean's office. Coverage beyond the semester limits must be approved by the Dean of the Graduate School. Although students receiving teaching or research stipends are customarily granted a tuition waiver, they are not guaranteed. Students are required to pay all college fees. Non payment of these fees at the required time will result in the assessment of late fees.

Domestic out-of-state students who are receiving a tuition scholarship are required to pursue in-state residency as soon as possible. In cases where students do not fulfill this requirement and have no valid reason for not doing so, the College of Arts and Sciences may limit the tuition scholarship amount to the in-state rate in subsequent semesters. In such cases, you will be responsible to pay the difference between in-state and out-of-state tuition.

EVALUATION FOR RENEWAL

In order to determine whether stipend support should continue, there is a semi-annual review of the Assistantships by the Graduate Committee. This evaluation is based on grades, performance and written student evaluations of teaching performance.

GROUNDS FOR SUSPENSION

1. A grade point average below C (2.0) for one semester. A cumulative grade point average below B (3.0) for more than one semester. A student will be put on probation after one semester with a grade point average of less than 3.0. Subsequent semesters below 3.0 may result in termination.

2. TA/GA's are expected to devote 100% of their time to their studies and TA/GA duties. Having a full or part-time job outside the department is grounds for immediate termination.

3. Unsatisfactory performance in the completion of assistantship duties. The following considerations will be among those used for the evaluation of a TA/GA's performance: promptness in grading, punctual attendance in labs, written evaluation of teaching by students in class or lab taught by the TA/GA, and response to duties other than teaching, such as proctoring, grading, and other departmental work assignments.

SUSPENSION PROCEDURE

(on grounds other than academic performance)

1. All complaints concerning the TA/GA must be written and given to the Director of Graduate Studies and a copy given to the Department Chair.

2. The TA/GA in question should be notified in writing that a complaint has been filed.

3. The TA/GA should talk to his/her supervisor or advisor and the Director of Graduate Studies immediately if he/she believes the complaint is unjust and/or to determine whether the problem can be rectified.

4. If the problem remains unresolved, it must be referred to the Graduate Committee. Both parties must be given the opportunity to state their cases.

5. Suspension must be made by a majority vote of the Graduate Committee and the Department Chairman.

6. The Department Chair must send notice of suspension to the TA/GA in writing.

DEGREE PROGRAM DESCRIPTIONS

Students be admitted to a specific degree program. It is possible to change degree programs once you begin, but any changes must be approved by the graduate committee and should be carefully considered with advice from your advisor. The following degree programs are available.

BA/MA Program

This is a 5 year combined undergraduate/graduate program leading to a single BA/MA degree. Students take 12 fewer undergraduate credits than they would otherwise take if the BA and the MA were obtained as separate degrees. The graduate requirements are the same as those for the MA program. The BA/MA is intended for students who desire graduate level study in the Geosciences, but do not intend to pursue a career as a professional geologist or to pursue Ph.D. level study.

MA Program

A non-thesis Master's level degree program is intended for students who desire graduate level study in the geosciences, but who plan to pursue careers other that geoscience, such as earth science education, business or law. Students complete a supervised project at the end of their course study. A typical MA program is expected to take 2 years to complete.

MS Program

A master's level degree requiring the completion and defense of a research thesis. This Program is intended for students who are considering a career as a professional geologist or continuing to Ph.D. level study in the geosciences. The MS student is closely supervised by a faculty member. A typical MS program is expected to take 2 years to complete.

Ph.D. Program

A doctoral level program is intended for students who desire a career in academia or other careers that require advanced training of research methods. Students may enter the program with a BS or MS degree, but BS students are expected to take a longer time to complete the program. A typical Ph.D. program is expected to take 4 years for students entering with a BS, and 3 years for students entering with a MS degree.

PROFESSIONAL SCIENCE MANAGEMENT CERTIFICATE PROGRAM

The Department of Geology offers an advanced, graduate certificate program in Professional Science Management. The Professional Science Management (PSM) certificate is designed to allow students to pursue advanced training in science without a Ph.D., while simultaneously developing highly-valued business skills without an MBA. The PSM is best suited for students who seek science careers in business, government or non-profit organizations

PROFESSIONAL SCIENCE MANAGEMENT CERTIFICATE PROGRAM

The University at Buffalo Department of Geology offers a specialized Professional Science Management certificate in Environmental Geographic Information Systems (GIS). The program, sponsored by the Alfred P. Sloan Foundation, is directed toward students seeking rapid advancement in public or private organizations by integrating management and professional skills with traditional geological technical skills. In our advanced certificate program, management and high-performance computing courses are combined with traditional environmental earth science courses. Students may choose between a focus on Natural Hazards Evaluation, Environmental Earth Science or Natural Resource Development.

The Certificate program is open to candidates for the Master's degree in Natural Science Interdisciplinary, Geography, **Geology**, Chemistry, Biology, or those already holding an appropriate baccalaureate degree in the sciences. U.S. and international students are eligible to participate in the Certificate program.

Admission

Students enter the program by applying to and being accepted in a 'home department' – a department in which they will pursue disciplinary coursework and a related internship or laboratory experience. Students may pursue the Certificate through the Departments of Biological Sciences, Chemistry, **Geology**, or Geography.

Students must apply online through the University's Interactive Graduate Application Site: http://www.grad.buffalo.edu/admissions/applications.php. There is no application fee to apply to the certificate program if you are a current graduate level student at the University at Buffalo, or if you've applied to a graduate program at the University at Buffalo. Applications are accepted on a rolling basis, but you're encouraged to apply early.

Coursework

The PSM program requires the completion of five courses. The professional courses are in management skills evaluation (MGG 501 or MGB 666) and a graduate research ethics (PHI 640). The geology courses are Analysis of Geological Data (GLY 529), GIS for Earth and Environmental Scientists (GLY 560) and and 3 Credit hours of Graduate Research (GLY 633)

Substitution of courses completed at other institutions or within other departments will be allowed at the discretion of the Department of Geology, Director of Graduate Studies.

All students will be required to develop a portfolio of their work; including presentations from the internship/project/lab experience. **Exit interviews are mandatory upon program completion and should be scheduled with your academic advisor during your last semester of classes.**

Academic Grade Requirements:
A graduate student must maintain a minimum of a B (3.0) average in graduate courses. A grade of C or higher must be received in all graduate courses taken outside of Geology.

PORTFOLIO REQUIREMENTS:

Science Master's students are required to compile a set of materials that summarizes and displays his or her knowledge, skills, and problem-solving capabilities in the field of their home department. The portfolio emphasizes the student's broad competencies. In addition, the portfolio highlights the student's ability to design, manage, operate, and report on a project or projects, as both technical and project management skills are typically required for science managers. The portfolio should also maintain a research component because the student will develop research projects and write research papers in selected courses. This work will provide the student with the necessary research experience and allow the student to develop a balanced intellectual growth both in practical skills and in critical thinking. The portfolio can also be part of a student's application package when he or she is seeking professional employment.

The portfolio **must contain** the following items, along with any other related documents:

- *A statement of education and professional goals achieved and perceived (2 pages);*
- *A resume (2 pages); and,*
- *A primary research paper (10-15 pages or more) pertaining to the internship/project/lab experience. The paper should include the basic elements of a research paper such as introduction, literature review, analysis, results and discussion, and conclusions.*

Examples of other documents to include in your portfolio are:

- *Grant proposals;*
- *Class projects/papers;*
- *Internship report; and*
- *Conference papers*

Rules Governing Portfolio Creation:

The materials in the portfolio must be physically assembled in a manner that achieves a professional appearance. All elements within each required item must be organized cohesively and be self-explanatory. Although the paper and application study may be initially developed in courses, it is anticipated that further revisions will usually be required in order to ensure the quality of the portfolio at a level satisfactory for graduation. Both hard copy and digital copy must be submitted to your advisor (with a copy to the Geology Office).

The academic advisor is responsible for helping you select courses appropriate for the completion of your portfolio. This should be part of the planning in the advisement period prior to the first semester of class work. Upon completion of the portfolio the student's advisor and a second reader must evaluate the work, and if it is satisfactory, they will approve the portfolio and submit an M[multipurpose]-form to the Graduate School granting permission for the student to graduate.

INTERNSHIPS

Internships are available to students enrolled in the Professional Science Management Program (PSM) as part of their course curriculum.

Developing an internship:

The first step in obtaining an internship is to discuss placement options with your Advisor to decide the type of organization with which you would like to work. UB's Office of Career Planning and Placement keeps a list of organizations that accept interns and will provide you with leads. You should consider your placement carefully, making sure you have the skills that the organization requires and that the organization will provide you with opportunities that coincide with your career goals. You will need to contact the organization to arrange for an interview and negotiate a contract with the company representative.

Before attending the interview, pick up a contract form from the Geology Department Office. You and the organization supervisor should fill out the contract at the time of the interview. During the interview, you and your supervisor should agree on what your duties will be. You must return the completed contract to the Geology Department Office and register for the internship. ***You must work a minimum of 135 hours during the semester in order to receive the full three-credits required for this course***.

Upon completion of your internship, your supervisor must write a letter of evaluation regarding the work you performed, and you must write a 10-15 page research paper pertaining to your internship experience. The paper should include basic elements of a research paper, including an introduction, literature review, analysis, results and discussion, and conclusions. Your paper must include information about some of your completed projects and accomplishments. You should also evaluate the internship experience as a whole and state whether you would recommend this organization to other students.

It is your responsibility to make sure that your paper and the evaluation from your supervisor are received by the Geology Department Office by the deadline on your contract.

BA / MA DEGREE PROGRAM

Advisement

You will be assigned an advisor to assist you in selecting your courses. Your Advisor must approve a program of study. Any change to this program must be approved in writing by your advisor. The advisor will advise you regarding a course of study and certify in writing to the Chair that the you have fulfilled your degree requirements. It is the student's responsibility to ensure that all degree requirements are met in a timely fashion. In particular, the Graduate School has several stringent requirements regarding time of submission of the Application to Candidacy and M-Form. These deadlines are strictly enforced and failure to meet them will result in a delay of your graduation by one whole semester with the cost of continued registration.

Degree Progress Form

During each semester you must arrange a progress review meeting with your advisor prior to October 15th for the fall semester and February 28th for the Spring semester. At this meeting the Degree Progress Form will be completed and signed. This form keeps a record of your advisement, intended and completed coursework. **The completed form is returned to the office** to be filed in your folder as confirmation of your progress toward your degree objective and must be updated each semester.

Failure to follow the above requirement will result in a "checkstop" being place on your university record preventing further course registration. The checkstop will not be removed until the progress form is completed and turned in to the office. This procedure will be strictly enforced.

Pegrum Lecture Series

In an effort to familiarize students and faculty with current research by specialists in the varied fields of geology, the Department has frequently scheduled lectures presented by visiting scientists as well as members of this Department.

It is expected that you attend lectures and participate in discussions.

Formal Course Work

Formal course work is defined as 'actual classes' taken. This does **not** include seminars or courses numbered GLY 526, 599, 633, or 700. A list of all courses you will be taking must be approved by your Advisory Committee and attached to your Degree Progress Form. This list will be your program of study.

Course Load

Incoming students should be full time students to be prepared for admission to candidacy for the degree as soon as possible. You are encouraged to become involved in your project topic as soon as possible after enrollment.

REQUIRED GEOLOGY COURSES

Undergraduate Course Requirements:

- GLY 101-102 Global Environmental Science or GLY 103 & 104 Evolution of the Earth and Solar System
- GLY 106 Geological Mapping Techniques
- GLY 407 Geological Field Training
- MTH 121 or Higher Survey of Calculus and its Applications
- PHY 101 or Higher College Physics
- PHY 151 or Higher College Physics Lab
- CHE 101 General Chemistry
- **Three of the following four sequences must be completed**
  - GLY 215/216 Soft Rock: Sedimentology/Paleontology/Stratigraphy
  - GLY 305/306 Mineralogy/Petrology
  - GLY 312/313 Surface Processes and Hydrology
  - GLY 325/326 Structure/Geophysics/Tectonics

Graduate Course Requirements:

- Three credit hours from each of the following categories: Environmental, Volcanology, General Geology
- Six credit hours of Geology electives.
- Completion of GLY 501
- Fifteen credit hours of graduate course work to be selected to support career objectives with the advice and approval of advisor.

Academic Grade Requirements

A graduate student must maintain a minimum of a B (3.0) average in graduate courses. A grade of C or higher must be received in all graduate courses taken outside of Geology. Should the cumulative grade point average at any time fall below a B (3.0), the student will be placed on probation. If the grade average falls below a B the second successive semester, the student will be dropped from the degree program.

Satisfactory Progress

Satisfactory progress in the BA/MA degree program consists of completing the program of study on the expected schedule for graduation in two years while also meeting or exceeding the required grades.

The lack of satisfactory progress will be noted on the Degree Progress Form. After two consecutive semesters of unsatisfactory progress, a hearing will be held to determine if the student should be terminated from the Geology Department. The Director of Graduate Studies will chair this hearing, (unless the student's advisor is the Director of Graduate Studies, in which case the second most senior member of the graduate committee will be chair). The hearing will include comments made by the student and the student advisor, and a written record of the proceedings will be made and placed in the student's file.

Degree Requirements

1. **Complete all of the University Undergraduate Requirements**

2. **Continuous** registration including the semester in which **all** degree requirements are completed, whether the student is on campus or not.

3. Minimum residence as a full-time student of **one** year. A student may be a part-time student and still accumulate residence credit (24 semester hours).

4. Submission of Application to Candidacy to the Graduate School prior to deadlines listed below:

For degree conferral on…	Student forwards completed Application to Candidacy to divisional committee
Feb. 1	Sept. 1
June 1	Nov. 1
Sept. 1	April 1

5. **Compliance with the Graduate School regulations regarding degree conferral. The Graduate School Policies and Procedures Manual should be consulted for further information regarding course work, examinations, and other requirements. The website address is: http://www.grad.buffalo.edu/grad-docs/policies)**

MASTER'S OF ARTS PROGRAM

Admission

Students entering the MA program are expected to hold a BA or BS in Geology. Students applying with other science or engineering degrees must have 12 credits in geology beyond the introductory level, or must complete these credits during their masters program. The MA advisor may require additional prerequisites depending upon the course of study.

Advisement

You will be assigned an advisor to assist you in selecting your courses. Your Advisor must approve this program of study. Any change to this program must be approved in writing by your advisor. The advisor will advise you regarding a course of study and certify in writing to the Chair that the you have fulfilled your degree requirements. It is the student's responsibility to ensure that all degree requirements are met in a timely fashion. In particular, the Graduate School has several stringent requirements regarding time of submission of the Application to Candidacy and M-Form. These deadlines are strictly enforced and failure to meet them will result in a delay of your graduation by one whole semester with the cost of continued registration.

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Course Load

Incoming students should be full time students to be prepared for admission to candidacy for the degree as soon as possible. You are encouraged to become involved in your project topic as soon as possible after enrollment.

Student Type	Full - Time		Part – Time **
	Min. Credit Hours	Max. Credit Hours	
Non Assisted Students	12	19	11 Hours or Less
Teaching Assistants	9	9*	Not Allowed
Research Assistants	9	9*	Not Allowed

*The tuition scholarships covers up to 9 credit hours, you may be held responsible for payment of tuition if you register for more than 9 credit hours.

**Although part-time study is available, the time limit imposed by the graduate school is still enforced

- ➔ Students who need full time status but are registered for less than the minimum credit hours are required to submit the Certification of Full Time Status form.
- ➔ Registration for additional credit hours ("override") requires the written permission from your graduate advisor and approval from the Graduate Dean's office.
- ➔ Up to, but no more than, four (4) credits of Geology 526 (Geology for Graduate Students) may be counted toward fulfillment of minimum credit hours required for a graduate degree.)
- ➔ You **must** maintain continuous residency by registering for at least one (1) credit hour each semester until your degree is conferred.

Maximum Time Allowance

The Graduate School sets a maximum of four (4) years allowed for completion of the Master's degree from the date of initial registration into the geology program**.** Request for extensions of time limit must be justified using a Graduate Petition Form, which must be approved by the chair, the dean's office and the Graduate School.

Academic Grade Requirements

A graduate student must maintain a B (3.0) average in graduate courses. A grade of C must be received in all graduate courses taken outside of Geology. Should the cumulative grade point average at any time fall below a B (3.0), the student will be placed on probation. If the grade average falls below a B the second successive semester, the student will be dropped from the degree program.

Satisfactory Progress

Satisfactory progress in the MA degree program consists of completing the program of study on the expected schedule for graduation in two years while also meeting or exceeding the required grades.

The lack of satisfactory progress will be noted on the Degree Progress Form. After two consecutive semesters of unsatisfactory progress, a hearing will be held to determine if the student should be terminated from the Geology Department. The Director of Graduate Studies will chair this hearing, (unless the student's advisor is the Director of Graduate Studies, in which case the second most senior member of the graduate committee will be chair). The hearing will include written comments made by the student and the student advisor, and a written record of the proceedings will be made and placed in the student's file.

Degree Requirements

1. **Continuous** registration including the semester in which **all** degree requirements are completed, whether the student is on campus or not.

2. Minimum residence as a full-time student of **one** year. A student may be a part-time student and still accumulate residence credit (24 semester hours).

3. Submission of Application to Candidacy to the Graduate School prior to deadlines listed below:

For degree conferral on…	Student forwards completed Application to Candidacy to divisional committee
Feb. 1	Sept. 1
June 1	Nov. 1
Sept. 1	April 1

4. **Compliance with the Graduate School regulations regarding degree conferral. The Graduate School Policies and Procedures Manual should be consulted for further information regarding course work, examinations, and other requirements. The website address is: http://www.grad.buffalo.edu/grad-docs/policies)**

Course Requirements:

The Maters of Arts degree requires 30 credit hours of graduate coursework including:

- Three credit hours from each of the following categories: Environmental, Volcanology, General Geology
- Six credit hours of Geology Electives.
- Completion of a project.
- Twelve credit hours of graduate course work to be selected to support career objectives with the advice and approval of advisor.
- No more than 3 credit hours of Seminar

MA PROGRAM CHECKLIST

First Semester:	**Second Semester:**
_____Progress Review Meeting	_____Progress Review Meeting
_____Degree Progress Form	_____Degree Progress Form
_____Approved Program of Study	_____GPA Greater than 3.0
_____GPA Greater than 3.0	_____Course Registration
_____Course Registration	
Third Semester:	**Fourth Semester:**
_____Progress Review Meeting	_____Progress Review Meeting
_____Degree Progress Form	_____Degree Progress Form
_____Application To Candidacy	_____GPA Greater than 3.0
_____GPA Greater than 3.0	
_____Course Registration	

Graduation Check List

In order to graduate the following must be on file

_____An approved Application to Candidacy

_____A completed M-Form

_____Compliance with the Graduate School regulations regarding degree conferral

MASTER'S OF SCIENCE PROGRAM

Admission

Students entering the MS program are expected to hold a BS or equivalent in Geology. Students applying with other science or engineering degrees must have 12 credits in geology beyond the introductory level and a Geological Field Course or must complete these courses during their masters program. The MS advisor may require additional prerequisites depending upon the course of study.

Advisement

You will be assigned a temporary advisor to assist you in selecting an initial program of study during the first semester. This advisor will help you select a permanent Faculty Advisory Committee that will recommend and approve a program of study. The minimum and usual number of members of the Faculty Advisory Committee is three. At least one member must be a full-time assistant, associate or full professor from the Department of Geology. The additional members are not required to be from the Department of Geology, but they must be assistant, associate, full, emeritus or adjunct professors at UB. The Faculty Advisory Committee may change the faculty representatives on the committee as the student re-defines interests or research, or as faculty members take sabbatical leaves. Either the committee or the student may initiate such changes, but the pre-existing Faculty Advisory Committee must approve the change in the composition of the Faculty Advisory Committee.

The Advisory Committee will advise the student regarding a course of study and, upon successful completion of the defense of the thesis, the Committee will certify in writing to the Chairman that the student has fulfilled their degree requirements. It is the student's responsibility to ensure that all degree requirements are met in a timely fashion. In particular, the Graduate School has several stringent requirements regarding time of submission of the Application to Candidacy and M-Form. These deadlines are strictly enforced and failure to meet them will result in a delay of your graduation by one whole semester with the cost of continued registration.

Pegrum Lecture Series

In an effort to familiarize students and faculty with current research by specialists in the varied fields of geology, the Department has frequently scheduled lectures presented by visiting scientists as well as members of this Department.

It is expected that you attend lectures and participate in discussions.

Degree Progress Form

During each semester you must arrange a progress review meeting of your advisory committee prior to October 15th for the fall semester and February 28th for the spring semester. At this meeting the Degree Progress Form will be completed and signed. This form keeps a record of your advisement, intended and completed coursework, thesis proposal, and the proposed date of your thesis defense. **The completed form is returned to the office** to be filed in your folder as confirmation of your progress toward your degree objective and must be updated by the committee each semester.

Failure to follow the above requirement will result in a "checkstop" being place on your university record preventing further course registration. The checkstop will not be removed until the progress form is completed and turned in to the office. This procedure will be strictly enforced.

Formal Course Work

Formal course work is defined as 'actual classes' taken. This does **not** include seminars or courses numbered GLY 526, 599, 633, or 700. A list of all courses you will be taking must be approved by your Advisory Committee and attached to your Degree Progress Form. This list will be your program of study.

Course Load

Incoming students should be full time students to be prepared for admission to candidacy for the degree as soon as possible and to allow for registration for thesis research during later semesters. You are encouraged to become involved in your thesis research topic as soon as possible after enrollment.

Student Type	Full - Time		Part – Time **
	Min. Credit Hours	Max. Credit Hours	
Non Assisted Students	12	19	11 Hours or Less
Teaching Assistants	9	9*	Not Allowed
Research Assistants	9	9*	Not Allowed

*The tuition scholarships covers up to 9 credit hours, you may be held responsible for payment of tuition if you register for more than 9 credit hours.

**Although part-time study is available, the time limit imposed by the graduate school is still enforced

- ➔ Students who need full time status but are registered for less than the minimum credit hours are required to submit the Certification of Full Time Status form.
- ➔ Registration for additional credit hours ("override") requires the written permission from your graduate advisor and approval from the Graduate Dean's office.
- ➔ When **performing** actual research for the thesis or dissertation, register under Geology 633 (Graduate Research). When **writing** the thesis, after research is completed, register under Geology 700 (Thesis Guidance). Unsatisfactory

progress on thesis research will result in a grade of U. Unsatisfactory progress in thesis research may be grounds for dismissal from the degree programs. (There is no minimum number of credit hours required for GLY 633 or 700. Up to, but no more than, four (4) credits of Geology 526 (Geology for Graduate Students) may be counted toward fulfillment of minimum credit hours required for a graduate degree.)

- ➔ Once thirty (30) credit hours have been successfully completed, registration of one hour is all that is required. For those students who have reached this stage of their degree program, certification of full time status may be requested for one year as long as the Application to Candidacy has been submitted.
- ➔ If you leave the university before receiving a degree, you **must** maintain continuous residency by registering for at least one (1) credit hour of either GLY 633 (Research Guidance) or GLY 700 (Thesis Guidance) each semester until your degree is conferred.

Maximum Time Allowance

The Graduate School sets a maximum of four (4) years allowed for completion of the Master's degree from the date of initial registration into the geology program**.** Request for extensions of time limit must be justified using a Graduate Petition Form, which must be approved by the chair, the deans office and the Graduate School.

Academic Grade Requirements

A graduate student must maintain a minimum of a B (3.0) average in graduate courses. A grade of C or higher must be received in all graduate courses taken outside of Geology. Should the cumulative grade point average at any time fall below a B (3.0), the student will be placed on probation. If the grade average falls below a B the second successive semester, the student will be dropped from the degree program.

There is also an option of electing to take a limited number of courses on a **Satisfactory/Unsatisfactory** basis (S/U). This is permissible only for advanced courses taken **outside** the department. (Consult Graduate School Bulletin for latest guidelines.) A large number of S/U grades can result in evaluation problems when applying for jobs or for admission to other graduate schools.

Satisfactory Progress

The lack of satisfactory progress in either coursework or research will be noted on the Degree Progress Form. After two consecutive semesters of unsatisfactory progress, a hearing will be held to determine if the student should be terminated from the Geology Department. The Director of Graduate Studies will chair this hearing, (unless the student's advisor is the Director of Graduate Studies, in which case the second most senior member of the graduate committee will be chair). The hearing will include written comments made by the student and the student advisor, and a written record of the proceedings will be made and placed in the student's file.

Degree Requirements

THESIS PROGRAM

1. **Continuous** registration including the semester in which **all** degree requirements are completed, whether the student is on campus or not.

2. Students who do not hold a BA or BS in Geology **must** have 12 credits in geology beyond the introductory level and a Geological Field Course or complete these courses during their masters program. The MS advisor may require additional prerequisites depending upon the course of study.

3. Completion of a minimum of thirty (30) semester hours of graduate level credit beyond the Bachelor's degree with a grade point average of 3.0 (B). These credits may include courses from other departments with permission from your graduate committee before registration. At least twenty-four (24) of the thirty (30) credits must be based on formal course work; **not** including courses numbered Geology 526, 599, 633, or 700. Upon approval of the thesis committee up to 3 credits of seminar may be substituted for formal course work.

4. Minimum residence as a full-time student of **one** year. A student may be a part-time student and still accumulate residence credit (24 semester hours).

5. **Submission of a thesis proposal approved by your Faculty Advisory Committee, and circulated to the entire faculty within the department, prior to the end of the second semester of study. A copy endorsed by your committee will be placed in your department file.**

6. Submission of Application to Candidacy to the Graduate School prior to deadlines listed below:

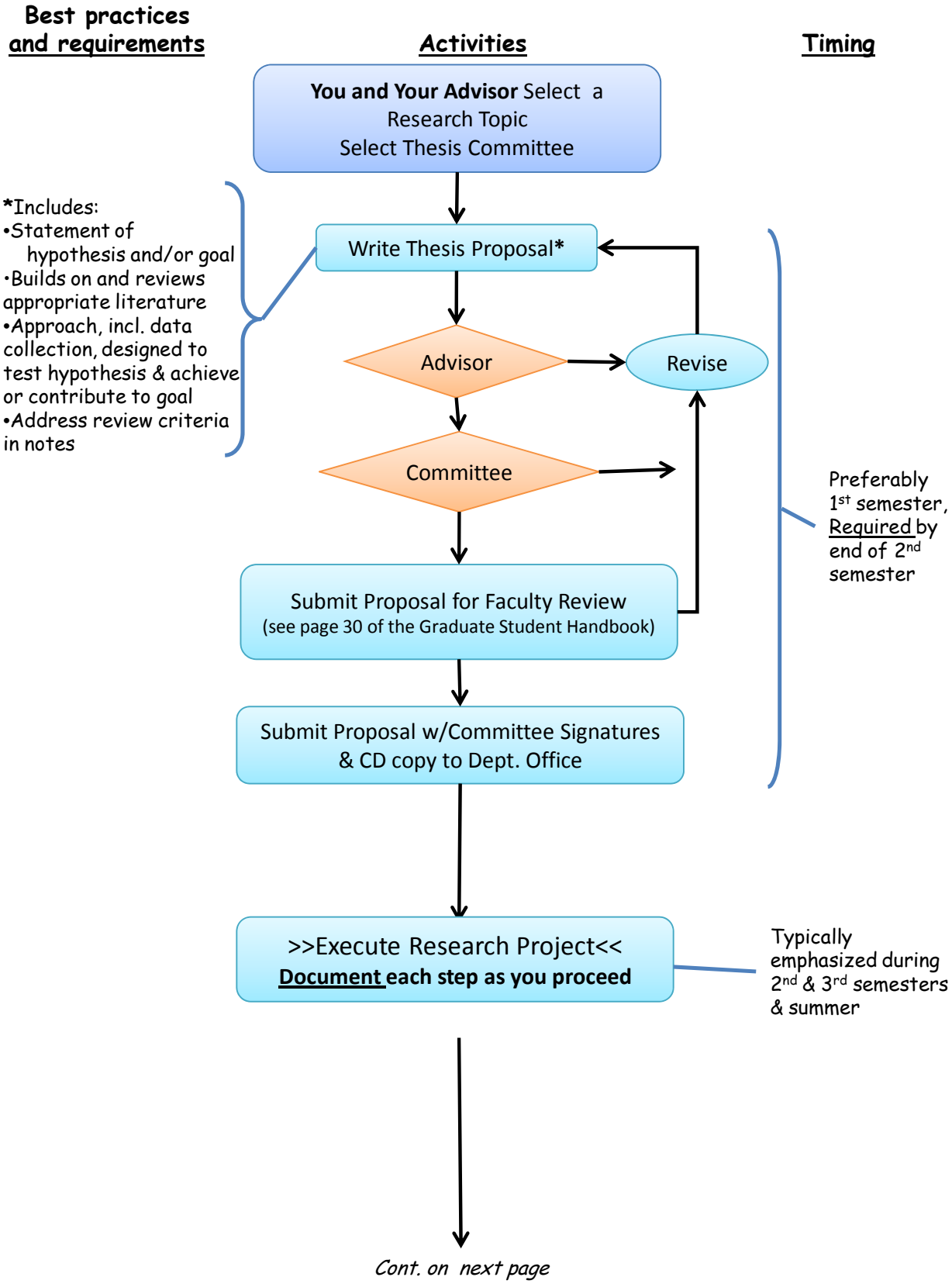
For degree conferral on…	Student forwards completed Application to Candidacy to divisional committee
Feb. 1	Sept. 1
June 1	Nov. 1
Sept. 1	April 1

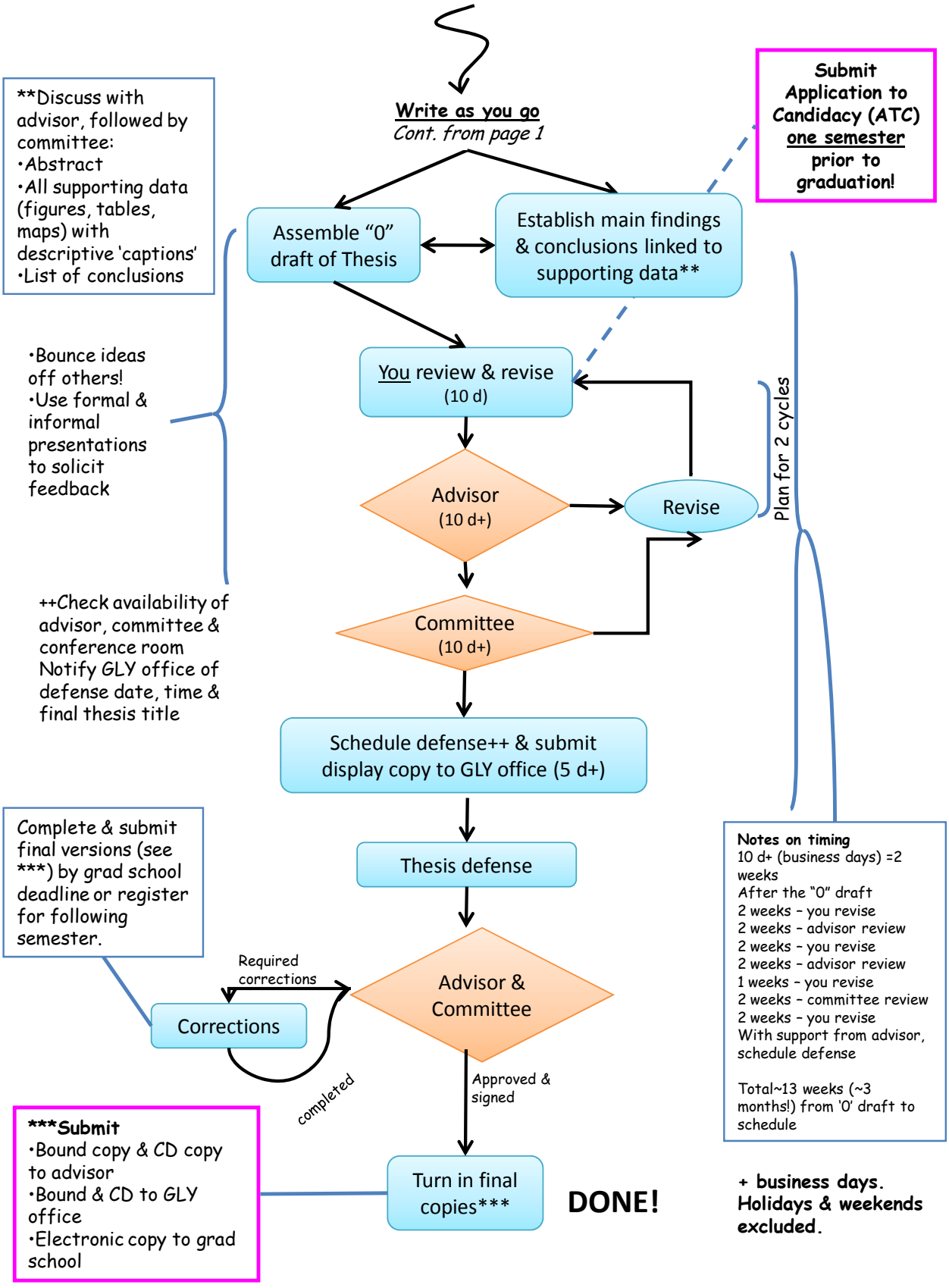
7. Completion of a thesis approved by the student's Faculty Advisory Committee.

8. Successful completion of a final examination consisting of an oral presentation and defense of thesis. This will consist of questions directly pertinent to the student's research and other questions aimed at assessing the candidate's general knowledge of basic geology.

9. Compliance with the Graduate School regulations regarding degree conferral. Note: The Graduate School Policies and Procedures Manual should be consulted for further information regarding course work, examinations, and other **requirements. The website is: www.grad.buffalo.edu**

MS THESIS TIMELINE





MS thesis timeline by R.M. Allen-King and M.L. Roth, edition of 9/17/2010

THE THESIS

The thesis serves several related educational functions:

- ➔ It is beneficial for acquiring competence in certain of the analytical techniques of the geological sciences;
- ➔ It provides the student with practice in application of the scientific method;
- ➔ It gives practice in making accurate descriptions of observations, and in giving clear, concise expression of ideas in writing.
- ➔

The thesis topic is selected by mutual agreement of the Thesis Advisor and the Student. The most effective topic is one which interests both the Student and Advisor, and integrates with other ongoing research in the program. Students are advised to talk to several faculty members upon arrival in the department, even if they already tentatively decided on an Advisor and thesis topic. The Student is not obligated to accept a thesis topic that the Advisor recommends, but neither is the Advisor obligated to approve any topic that the Student recommends. If Advisor and Student cannot agree upon a topic, the student is free to work with another faculty member if the faculty member is willing. Students should be aware, however, that RA's are often directly linked to a student's thesis topic, and that choosing another thesis topic may result in a loss of RA support.

If a student expects to complete the program in the usual two years, enough background should be acquired during the first year to intelligently pursue a research project during the summer between the first and second years. If the field of specialization is not decided upon, or is changed, and added background for research is required, the student may receive less financial support, or no support at all, for the additional time needed to complete the degree due to a two-year limit on support for Master's candidates.

THE PROPOSAL

Every student is required to submit to the department a formal thesis proposal. The proposal assures that both the student and the department know what is expected from the thesis project. This written proposal should begin with an abstract of no more than 300 words and should describe the anticipated research in no more than 7 pages (single spaced, 12 point font and 1 inch margins) including figures and tables, but not including references. In it the student will present the problem and discuss the plan, objective, approach, and scope of the proposed thesis. In considering the proposal, the faculty will weigh whether the student appears adequately prepared for the proposed research. Revisions may also be advised at this time. Examples of proposals are on file in the main office.

The proposal must be approved by the end of the second semester!

Do not start writing the proposal until your advisor has approved the topic!

- ➔ Write a Proposal according to the guidelines in the Graduate Student Handbook (above).
- ➔ Submit the written proposal to your Advisor for approval.
- ➔ Once approved by your Advisor, submit it to the remaining members of your graduate committee for approval. They may suggest changes before they grant their approval.
- ➔ Upon approval of your thesis committee, email your proposal to the graduate secretary (Marty Roth, mlroth@buffalo.edu) and request that she forward it to the faculty. She will also print a paper copy of the proposal and place it in a binder for other interested members of the department to read. In addition, Faculty have 2 weeks to provide feedback to you and/or your advisor. If you receive no feedback from a professor, you should assume that that professor accepts your proposal "as-is."
- ➔ After you have received faculty comments, and made suggested changes, provide the office with a paper copy of your proposal with the signatures of your thesis committee members on the cover page and a read only disk of the final proposal. This copy will be available for reviewing by interested parties.

Oral Presentation and Defense

The Master's Thesis must be defended orally before the Thesis Committee. Other faculty and students are invited but not required to attend. The student is responsible for arranging the date and time of the Defense which must be at least one month prior to the Graduate School's Deadline for all materials to be submitted. There is no set time limit for the defense, but a two (2) hour time slot is usually scheduled. **Note that a Thesis Defense is rarely held in the summer and that faculty members are under no obligation to agree to such a meeting outside of the official academic year.**

The process leading up to the Defense generally is as follows. Once a draft of the thesis has been approved by the Thesis Advisor (usually after several revisions), the student provides the remaining Thesis Committee members each with a copy. The Thesis Committee has **at least two weeks** to read the draft Thesis and make written comments. Once the Committee members and Thesis Advisor approve any required revisions, the oral thesis defense may be scheduled. The date, time, and place of the defense is arranged between the student and the Thesis Committee. Because it may be difficult to schedule a defense with only 5 working days notice, the student is advised to arrange a **tentative** defense date at least 1 month in advance. To ensure the student has time to make the necessary revision after the defense, **the defense must be held one month prior to Graduate School's deadline for submitting materials.** A memo is prepared by the department office staff, detailing this information, is to be posted and circulated to all faculty members a minimum of five (5) working days before the defense is to be held. A copy of the draft thesis must be placed in the department office at least five (5) working days before the defense to allow examination by interested faculty.

Note that the time required for the oral defense (1 day), the period of time required before the Graduate School deadline (1 month), the Thesis Committee review (2 weeks), and the display period in the office (5 days), is a **minimum** of seven (7) weeks. Therefore is **strongly recommended** the student submit a draft copy of the thesis during the semester prior to the semester of degree conferral. **The Thesis review and Defense will not be accelerated if the draft Thesis is not completed in time.**

THE DEFENSE

The oral defense of the thesis completes the requirements in all programs where a thesis is presented for a Master's degree. The defense is open to all members of the UB academic community. The exam, chaired by a member of the thesis committee other than the major advisor, ordinarily lasts about one to three hours, commencing with a presentation **not exceeding twenty minutes** by the candidate. This presentation should include a statement of the problem, methods used, results obtained, and conclusions reached. Visual aids (maps, slides, and sketches) should be used to clarify presentation, and two copies of the thesis are to be available for perusal by the examiners during the oral defense. This presentation should be given as though it were a formal paper being presented at a scientific meeting.

Upon completion of the summary, attendees outside of the committee will be given an opportunity to ask questions. Afterward, the committee will offer an opportunity for others to leave, and will ask questions. After the committee has completed its questions, all others (including the student) will be asked to leave while the committee and other interested faculty deliberate the outcome of the defense.

When the examination is completed, the thesis committee and other department faculty who are present will determine, in the absence of the student and others that had attended, if the oral defense was passed successfully. In the event of failure, the student will be permitted a second oral exam which is to be scheduled in consultation with his committee.

Upon successful defense of the Thesis: the student makes such changes as suggested by the Thesis Committee during the defense. It is the Thesis Advisor's responsibility to assure that the suggestions of the other Committee Members have been incorporated into the final Thesis (i.e. it is not necessary for the other Committee Members to see the final version unless requested).

Also:

(1) Check with the office that an "M" form, which certifies that the defense was satisfactorily completed and that **all** requirements have been satisfied, including 2 and 3 below, has been completed.

(2) Comply with the Graduate School regulations pertaining to the publication and the electronic submission of the thesis to their office

(3) Submit one hardbound copy and a CD of the thesis complete with maps and other figures to the departmental office, one hardbound copy or CD (at the discretion of the advisor) to the major thesis advisor, and one softbound copy or CD (at the discretion of the faculty member) to each faculty member serving on your committee.

For degree conferral on…	ALL required materials must be submitted by…
Feb. 1	The Friday before Spring Semester Begins
June 1	The last day of Spring Exams
Sept. 1	The Friday before Fall Semester Begins

ORGANIZATION AND PRINTING OF THESIS

The Student is responsible for obtaining up-to-date information on the accepted form and organization of the thesis, including headings, references, and scientific writing in general.

The Graduate School requires uniformity of thesis format: For the Graduate School Requirements for the Thesis see the website http://www.grad.buffalo.edu/etd/index.html

Obtaining a writing style manual is recommended and several are available in the office. The **U.S. Geological Survey's Suggestions to Authors** is available in our library, and **Geowriting: A Guide to Writing, Editing and Printing in Earth Science**, 1973, may be obtained for a small fee from the American Geological Institute, 2201 M. Street, N.W., Washington, DC 20037.

SUGGESTIONS FOR THESIS REPRODUCTION

Great Lakes Graphics & Printing 520 Lee Entrance Suite 105, Amherst 636-8440

MS PROGRAM CHECKLIST

First Semester:	**Second Semester:**
_____Advisor Meeting	_____Committee Meeting
_____Degree Progress Form	_____Degree Progress Form
_____Program of Course Study	_____Study Program Approval
_____GPA Greater than 3.0	_____Thesis Proposal Approved
_____Course Registration	_____GPA Greater than 3.0
	_____Course Registration
Third Semester:	**Fourth Semester:**
_____Committee Meeting	_____Committee Meeting
_____Degree Progress Form	_____Degree Progress Form
_____Application To Candidacy	_____GPA Greater than 3.0
_____GPA Greater than 3.0	_____Thesis Defense
_____Course Registration	

Graduation Check List

In order to graduate the following must be on file

_____An approved Application to Candidacy

_____A completed M-Form

_____Electronic submission of the thesis to the Graduate School

_____Compliance with the Graduate School regulations regarding degree conferral

_____One hardbound ***and*** CD copy of thesis to the department.

_____One hardbound or CD (at the discretion of the advisor) copy of thesis to your thesis advisor.

_____One softbound or CD (at the discretion of the faculty member) of the copy to each faculty member serving on your committee

PH.D. PROGRAM

The Ph.D. student must advance successfully through a Qualifying Exam, and then a Technical Defense, and a Public Dissertation Defense. As part of the Qualifying Exam, the student must prepare two proposals, one of which normally becomes the Dissertation Proposal. It is critical that the student choose a Major Research Advisor and tentative research project during the **first semester in residence**, as the Qualifying Exam is conducted during the second semester in residence (if the student enters with a Master's Degree) or the third semester (if the student enters without a Master's Degree).

The Major Research Advisor, in consultation with the student, will appoint a Faculty Advisory Committee. The minimum and usual number of members of the Faculty Advisory Committee is three. At least one member must be a full-time assistant, associate or full professor from the Department of Geology. The additional members are not required to be from the Department of Geology, but they must be assistant, associate, full, emeritus or adjunct professors at UB. Outside readers are not required, but the choice is left to the discretion of the Faculty Advisory Committee (see section on the Outside Reader).

The Faculty Advisory Committee may change the faculty representatives on the committee as the student re-defines interests or research...

Once the program has been approved, the student may not deviate from the courses to be taken unless given approval **in writing** from your committee. You may neither add nor drop a course, for example, without specific approval in writing of the entire Faculty Advisory Committee. If you encounter any difficulties with the program (e.g., failing a course and wishes to drop it, or feel the course load is too heavy), you must arrange a meeting of your committee to consider the matter.

Ph.D. Program Progress Monitor Form

During each semester the Student must arrange a progress review meeting of the Advisory Committee prior to October 15th for the fall semester and February 28th for the Spring semester. At this meeting the Ph.D. Program Progress Monitor Form will be completed and signed. This form provides a record of advisement, intended and completed coursework, proposal topics and defenses, and the proposed date of the technical review. **The completed form is returned to the office** to be filed in the Student's folder as confirmation of the student's progress toward the degree objective and must be updated by the committee every semester.

Failure to follow the above requirement will result in a "checkstop" being place on the Student's university record preventing further course registration. The checkstop will not be removed until the progress form is completed and turned in to the office. This procedure will be strictly enforced.

Formal Course Work

Formal course work is defined as 'actual classes' taken. This does **not** include seminars or courses numbered GLY 526, 599, 633, or 700. A list of all courses you will be taking must be approved by your Advisory Committee and attached to your Ph.D. Progress Form. This list will be your program of study. A minimum of 24 formal course credits is required for the Ph.D. degree.

Course Load

Incoming students should be full time students in order to prepare for admission to candidacy for the degree as soon as possible and to allow for registration for thesis research during later semesters. The student is encouraged to become involved in the thesis research topic as soon as possible after enrollment.

Student Type	Full - Time		Part – Time**
	Min. Credit Hours	Max. Credit Hours	
Non Assisted Students	12	19	11 Hours or Less
Teaching Assistants	9	9*	Not Allowed
Research Assistants	9	9*	Not Allowed

*The tuition scholarships covers up to 9 credit hours, you may be held responsible for payment of tuition if you register for more than 9 credit hours.

**Although part-time study is available, the time limit imposed by the graduate school is still enforced

- ➔ Students who need full time status but are registered for less than the minimum credit hours are required to submit the Certification of Full Time Status form.
- ➔ Registration for additional credit hours ("override") requires the written permission from your graduate advisor and approval from the Graduate Dean's office.
- ➔ When **performing** actual research for the thesis or dissertation, register under Geology 633 (Graduate Research). When **writing** the thesis, after research is completed, register under Geology 700 (Thesis Guidance). Unsatisfactory progress on thesis research will result in a grade of U. Unsatisfactory progress in thesis research may be grounds for dismissal from the degree programs. (There is no minimum number of credit hours required for GLY 633 or 700.)
- ➔ Once seventy-two (72) credit hours have been successfully completed, registration of one hour is all that is required. For those students who have reached this stage of their degree program, certification of full time status may be requested.
- ➔ If you leave the university before receiving a degree, you **must** maintain continuous residency by registering for at least one (1) credit hour of either GLY 633 (Research Guidance) or GLY 700 (Thesis Guidance) each semester until your degree is conferred.

Maximum Time Allowance

The Graduate School sets a maximum of seven (7) years for a Ph.D. degree from the date of initial registration into the geology program. Request for extensions of time limit must be justified using a Graduate Petition Form, which must be approved by the chair, the deans office and the Graduate School.

Three years is the expected time for a student with a Master's degree to complete a Ph.D., four years if the student has not received a Master's prior to admission to the program. Students in the Ph.D. program who have not completed the requirements for the degree at the end of five years will be sent a warning letter pointing out the University's seven year deadline for the degree, and noting that unless the student finishes at the end of ten semesters, he/she will have failed to maintain the expected rate of progress. At the end of six years essentially the same letter will be sent. During the 12th semester formal review by an *ad hoc* committee (the major advisor is not a member of the committee but is the presenter of the case). A schedule for completion of the remaining major requirements prior to the end of the 14th semester is communicated to the student. Near the end of the 14th semester the committee hears reasons, if any, not to expel the student at the end of the semester. A decision is required. This procedure is to be repeated every semester thereafter.

Academic Grade Requirements

A graduate student must maintain a minimum of a B (3.0) average in graduate courses. A grade of C or higher must be received in all graduate courses taken outside of Geology. Should the cumulative grade point average at any time fall below a B (3.0), the student will be placed on probation. If the grade average falls below a B the second successive semester, the student will be dropped from the degree program.

There is also an option of electing to take a limited number of courses on a **Satisfactory/Unsatisfactory** basis (S/U). This is permissible only for advanced courses taken **outside** the department. (Consult Graduate School Bulletin for latest guidelines.) A large number of S/U grades can result in evaluation problems when applying for jobs or for admission to other graduate schools.

Satisfactory Progress

The lack of satisfactory progress in either coursework or research will be noted on the Ph.D. Program Progress Monitor Form. After two consecutive semesters of unsatisfactory progress, a hearing will be held to determine if the student should be terminated from the Geology Department. The Director of Graduate Studies will chair this hearing, (unless the student's advisor is the Director of Graduate Studies, in which case, the second most senior member of the Graduate Committee will be chair). The hearing will include comments made by the student and the student advisor.

Pegrum Lecture Series

In an effort to familiarize students and faculty with current research by specialists in the varied fields of geology, the Department has frequently scheduled lectures presented by visiting scientists as well as members of this Department.

It is expected that you attend lectures and participate in discussions.

Degree Requirements

The Doctor of Philosophy degree is a research degree and is awarded as a result of the successful completion of a scientifically significant and unique research project, presented in the form of a Ph.D. dissertation.

It is the Student's responsibility to ensure that all degree requirements are met in a timely fashion. In particular, the Graduate School has several stringent requirements regarding time. These deadlines are strictly enforced and failure to meet them will result in a delay of your graduation by one whole semester with the cost of continued registration. The requirements involve the following:

1. **Continuous** registration including the semester in which **all** degree requirements are completed, whether the student is on campus or not.

2. Completion of undergraduate courses in geology and supporting sciences equivalent to those specified in the Division of Undergraduate Studies Bulletin for graduation with a Bachelor of Arts degree in geology. Summer field training in geologic mapping **must** be included. Exceptions or substitutions of graduate courses for these undergraduate course requirements may be made by petitioning your Faculty Advisory Committee. If your undergraduate major is in sciences **other than** geology you may develop a modified course program with the approval your committee.

3. Completion of a course of study in geology and related sciences of formal course work and seminars beyond the Bachelor's degree with an overall GPA of at least 3.0 (B). The department reserves the right to modify the number of credit hours, contingent upon your background and area of proposed study. The University requirement is completion of 72 credit hours of graduate study. In any case, at least up to 36 hours of these 72 may be awarded by the graduate committee for previous graduate-level study at this or other institutions. Normally this will include only formal graduate courses. Twenty-four (24) of the seventy-two (72) credits must be based on formal course work; **not** including courses numbered Geology 526, 599, 633, or 700. Upon approval of the thesis committee up to 3 credits of seminar may be substituted for formal course work.

4. Minimum residence requirement of one year (24 semester hours). This shall include two semesters of continuous full-time residence taken under the auspices of this institution and not already applied to the residence requirements for the Master's degree.

5. Maintenance of at least a B average (3.0) in all **geology** coursework taken for graduate credit.

6. Preparation of two (2) research proposals for the Ph.D. Qualifying Exam. Both, after written approval, will be defended before faculty (See Requirements for Research Proposals).

7. Technical defense of doctoral research, which should take place during the semester prior to the semester in which you expect to complete your dissertation and must occur **no less than four months** prior to the deadline date for your intended graduation.

8. Completion of a dissertation acceptable to the your Faculty Advisory Committee and the Graduate School, with an oral presentation and defense of dissertation. The dissertation must be original and make a substantial contribution to knowledge in the geological sciences.

9. Submission of Application to Candidacy to the Graduate School prior to deadlines listed below:

For degree conferral on…	Student forwards completed Application to Candidacy to divisional committee
Feb. 1	Sept. 1
June 1	Nov. 1
Sept. 1	April 1

10. Compliance with the Graduate School regulations regarding degree conferral. The Graduate School Policies and Procedures Manual should be consulted for further information and particulars regarding course work, examinations, and other requirements. The website is: http://www.grad.buffalo.edu/grad-docs/policies.

Requirements For The Qualifying Exam

(Proposal Defense)

It is advisable to reach agreement on the topic of the proposals early in the program in order to have sufficient time to do the focused background study needed before the proposals can be written.

If you entered the program with no previous graduate study (i.e., with a Bachelor's degree), you must have your proposal topics approved by your Advisory Committee before the end of the second semester of residence. The proposal must be submitted at least two weeks before the defense is scheduled. The defense must take place before the end of the third semester.

If you entered the program at a more advanced level (e.g., with a Master's degree) you must have your proposal topics approved by your Advisory Committee before the end of the first semester of residence. The proposal must be submitted at least two weeks before the defense is scheduled. The defense must take place before the end of the second semester.

Proposal #1:

A well thought out and fairly detailed proposal is **NOT** to exceed ten (10) normal double-spaced pages of text. Figures, extensive sets of equations, and literature references are not included within the ten-page limit. Background/context of the research, techniques of data collection to be used, methods of analysis of the data collected, nature of results to be expected, and the significance of the research should be included. The purposes are to determine whether you are thoroughly prepared to undertake the thesis proposed (and if not, to learn what remediation or enhancement of your preparation is necessary) and whether the proposed research appears to be acceptable for the Ph.D.

After your written proposal is approved by the advisory committee (augmented as appropriate) it will be defended before the faculty including (but not limited to) the thesis advisory committee, which may be augmented as is deemed

appropriate in each particular case. In any case, all geology faculty must be advised by written notice of the nature and time of defense. The faculty present may question the student on any aspect of science germane to the research topic. The decision of the examining committee (i.e. all faculty present during the defense) will be HIGH PASS, PASS, CONDITIONAL PASS (with the conditions being specified and summarized in writing, including a timetable for completion of the conditions if deemed appropriate), FAIL/RE-TAKE (with advice given to inform the student as to what the major deficiencies were and a timetable for re-examination), and FAIL (dismissal from the program).

Proposal #2:

This proposal is **NOT** to exceed five (5) normal double-spaced pages of text. Figures, extensive sets of equations, and literature references are not included in the five-page limit. Its purpose is to determine your ability to think independently and with the necessary imagination to function as an independent researcher in the future. The subject should be distinctly different from Proposal #1 and must be approved by the Advisory Committee before the student embarks on the preparation of the proposal. The proposal and the idea for the research should be original, i.e., not reflecting consultation with faculty and not a direct outgrowth of a previous Master's thesis or recent major term paper or the like. It need not be constrained to research that can be executed at U.B., i.e., limited by the equipment, facilities, and monetary support of research available here. The proposal, if approved in written form, will be defended before faculty including (but not limited to) the advisory committee augmented as appropriate in each particular case, with questioning to emphasize the area of the proposal, but not necessarily tightly constrained to it. The examining committee will judge the proposal and its defense HIGH PASS, PASS, CONDITIONAL PASS, FAIL/RE-TAKE, as for Proposal #1 (Note: FAIL [= dismissal] is not determined by this examination). This proposal topic should be approved and the written proposal prepared, submitted, and defended in close time proximity to Proposal #1.

THE DISSERTATION

The dissertation serves several related educational functions:

- ➔ It is beneficial for acquiring competence in certain of the analytical techniques of the geological sciences;
- ➔ It provides you with practice in application of the scientific method;
- ➔ It gives practice in making accurate descriptions of observations, and in giving clear, concise expression of ideas in writing.

The department encourages students to take the initiative in selecting a dissertation subject and in designing their research methods. The suitability and practicality of the selected subject is to be discussed with, and approved by, the Major Research Advisor before the dissertation proposal (ordinarily Proposal #1) is submitted to the department for consideration.

The Dissertation Proposal

Each student applying for candidacy in the Ph.D. program is to submit to the department in writing a formal **dissertation proposal**. It will be your responsibility to circulate this proposal to the Chairman of the Department, the Director of Graduate Studies, and to all other members of the Graduate Faculty in residence at the time of submission. Normally Research Proposal #1 will serve as the dissertation proposal. When this is not the case, the dissertation proposal should be of the kind described for Proposal #1 and approved by the Graduate Faculty in residence at the time of submission.

Note that in accordance with the PHD Degree Progress Form, a proposal must be approved by the third semester of the program. When approved by the faculty, the Faculty Advisor will place a copy of the proposal (marked with the date of approval and his signature) in the student's file. **Students should be sure their files have a copy on record.**

The Outside Reader

In addition to the required three members of the Faculty Advisory Committee, an outside reader may be advisable for examination the doctoral dissertation, at the discretion of the Faculty Advisory Committee, in consultation with the student. The outside reader provides an independent evaluation of the student's research. Normally, the duties of the outside reader are limited to an examination of the final draft of the dissertation, but additional tasks may be assigned to the outside reader, as agreed upon by all parties involved. The added task commonly consists of, but may not be limited to, participating in the oral defense of the thesis.

An outside reader is a qualified individual appointed outside the student's department who normally holds the highest degree in his or her respective field. The outside reader should be carefully chosen to avoid potential conflicts of interest.

If the outside reader finds the thesis unacceptable, the Faculty Advisory Committee must confer with the student and the outside reader to find an acceptable resolution to the problems. The Faculty Advisory Committee has the ultimate authority in remediating the difficulties.

The Technical Defense

Committee Composition:

The Technical Defense Examining Committee will comprise the dissertation committee and, whenever possible, the outside reader. If the research incorporates significant subject matter that is outside the expertise of the dissertation committee, the examination committee should include other faculty from the Geology Department, or if necessary another department, who can evaluate this component of the candidate's project.

Definition & Objectives:

The Technical Defense, as defined here, is a special meeting of the candidate's Ph.D. committee at which the student presents the research results for detailed scrutiny. The principal goal of the technical examination is to evaluate whether the candidate has conducted research and obtained results that, when completed, are likely to be reliable, of substantial scientific importance, and will satisfy the requirements for the degree. This committee meeting should take place at least four months prior to the date by which you intend to undertake the public defense of the dissertation. The active involvement of the entire dissertation committee in the evaluation of the candidate's research at this stage accomplishes two important goals: (1) it enables the committee to provide guidance about the scope of the project; (2) it enables the candidate to make substantial changes, if needed, without seriously disrupting your graduation schedule. Finally, you must provide, as preparation for the technical examination, a written summary of the dissertation and a timetable for its completion and a **detailed outline of the dissertation to all committee members.** These documents not only focus the examination, but also encourages the student to construct an organized and realistic plan for bringing the doctoral research to a close.

Timing & Qualifications:

The candidate must have an approved dissertation proposal on file in the department office. At the time of the examination, the candidate should have completed the acquisition of data. The majority of the analyses or interpretations should also be complete or be sufficiently near completion that the outcome is clear. Normally the candidate will have presented some of the results at scientific meetings and in one or more articles written for scientific journals by this time. However, the dissertation should not be completely written by the time of the technical examination.

Content & Duration:

A. Written Documentation - Two weeks prior to the technical examination, you must circulate to all the Department faculty and the entire examining committee, a proposed table of contents for the dissertation, a detailed abstract (5-10 pages) of its major contents and conclusions, and a specific timetable for completion of the remaining work (see below). At the examination this documentation, supplemented by whatever visual aids the candidate believes are appropriate, will form the basis for the presentation and discussion. The examination will also incorporate written questions about these documents from faculty not on the examining committee.

B. Presentation - The candidate should be prepared to present the following at the technical defense:

    1. Background and goals of the project.
    2. Methods of data collection and some representative data.
    3. Methods of analysis and major results for work completed and projected.
    4. Discussion of outstanding tasks and problems.
    5. Summarize anticipated conclusions.

C. Duration - This presentation should take 45 to 60 minutes. The examining committee will question the candidate about all aspects of the research, as they see fit. In total, the technical examination should occupy no more than two hours.

Evaluation & Recommendations:

The examining committee, by consensus, will grade the examination as a pass, conditional pass, or fail. These outcomes and their consequences are defined as follows:

Pass - The technical examination of the thesis indicates that the candidate possesses a mastery of your subject. The research is of high merit and has progressed far enough to assure its successful completion prior to the candidate's intended date for submission of the dissertation.

Conditional Pass - The degree of technical mastery is as for Pass but significant portions of the work need modest revision or reconsideration. The work completed does not assure a successful completion prior to the candidate's intended date for submission of the dissertation, but this outcome is likely if the candidate carries out the needed revisions. The committee will suggest remedies for the deficiencies (if possible), and set a specific timetable for their completion. This work may cause a delay in graduation. Either the major advisor or the dissertation committee will monitor the process of revision, as the examination committee deems appropriate. A repeat of the technical examination is unnecessary.

Fail - You did not display a sufficient mastery of your field; major problems exist with the research that require extensive revision and reconsideration. These deficiencies indicate that it is almost certain the work will not be or could not be successfully completed before your intended date of graduation. The examination committee may permit you to repeat the technical examination or may recommend to the Department's Graduate Committee that you be dismissed from the doctoral program. If permitted to repeat the examination, the committee will fully advise you of the needed changes and will set a specific timetable for execution of the work. You must repeat the technical examination within one year of the failed attempt. If you do not receive a pass or conditional pass on the second attempt, the examining committee again may give directions for revision or may recommend that you be dismissed from the program.

The Public Defense

At least two weeks is required for review by the Research Advisor and thereafter the other committee members. When the committee has approved the preliminary draft, the Research Advisor, in consultation with the student and other committee members, is to arrange a place, date, and time for the defense. **The date and time of the Defense must be at least one month prior to the Graduate School's Deadline for all materials to be submitted**. A memo prepared by the department office staff detailing this information is to be posted and circulated to all faculty members a minimum of five (5) working days before the defense is to be held. **A copy of the thesis must be placed in the department office at least five (5) working days before the defense for faculty perusal.**

Oral defenses may be undertaken at any time of the year providing the student's graduate committee and the student can agree on a time. Students should be aware that difficulties may arise during exam times and during the summer months. Graduate School requirements with regard to continuous registration and time limits for degree completion are of particular importance to students leaving the university before all requirements have been completed.

Note that the time required for the Public Defense (1 day), the period of time required before the Graduate School deadline (1 month), the Thesis Committee review (2 weeks), and the display period in the office (5 days), is a **minimum** of seven (7) weeks. Therefore is **strongly recommended** the student submit a draft copy of the thesis during the semester prior to the semester of degree conferral. **The Thesis review and Defense will not be accelerated if the draft Thesis is not completed in time.**

Upon successful completion of the oral defense, you must:

1. Check with the Office Staff that an "M" form, which certifies that the defense was satisfactorily completed and that **all** requirements have been satisfied, including 2 and 3 below, has been completed. This must be done by deadline dates. The Department will file the M Form with the Graduate School.

2. Comply with the Graduate School regulations pertaining to publication and submission of the dissertation. (See the Graduate School website: http://www.grad.buffalo.edu/grad-docs/policies).

3. Submit one hardbound ***and*** one CD copy of the dissertation complete with maps and other figures to the departmental office, and one to your major thesis advisor and to each faculty member serving on your committee.

Note that the time required for the oral defense (1 day), the period of time required before the Graduate School deadline (1 month), the Committee review (2 weeks), and the display period in the office (5 days), is a **minimum** of seven (7) weeks. Therefore is **strongly recommended** the student submit a draft copy of the dissertation during the semester prior to the semester of degree conferral. **The review and Defense will not be accelerated if the draft Thesis is not completed in time.**

ORGANIZATION AND PRINTING OF DISSERTATION

You are responsible for obtaining up-to-date information on the accepted form and organization of the dissertation, including headings, references, and scientific writing in general. Major Thesis Advisors will require a well-organized format before examining the thesis for content.

The Graduate School requires uniformity of thesis format: For the Graduate School Requirements for the Thesis see the website http://www.grad.buffalo.edu/etd/index.html

Obtaining a writing style manual is recommended and several are available in the office. The **U.S. Geological Survey's Suggestions to Authors** is available in our library, and **Geowriting: A Guide to Writing, Editing and Printing in Earth Science**, 1973, may be obtained for a small fee from the American Geological Institute, 2201 M. Street, N.W., Washington, DC 20037.

SUGGESTIONS FOR THESIS REPRODUCTION

Great Lakes Graphics & Printing 520 Lee Entrance Suite 105, Amherst 636-8440

DEGREE CHECKLIST

First Semester:

_____Advisor Meeting (BS)
Committee Meeting (MS)

_____GPA Greater than 3.0

_____Proposal Topic Approval (MS)

Second Semester:

_____Committee Meeting (BS)

_____Qualifying Exam (MS)

_____ GPA Greater than 3.0

_____Proposal Subjects Approval (BS)

Third Semester:

_____Qualifying Exam (BS)

_____ Committee Meeting (MS)

_____ GPA Greater than 3.0

Fourth Semester:

_____Committee Meeting

_____GPA Greater than 3.0

Fifth Semester:

_____Committee Meeting

_____GPA Greater than 3.0

Sixth Semester:

_____Committee Meeting

_____GPA Greater than 3.00

Seventh Semester:

_____Committee Meeting

_____Application to Candidacy

_____GPA Greater than 3.0

_____Dissertation Outline

_____Outside Reader Selected

_____Technical Defense

Eighth Semester:

_____GPA Greater than 3.0

_____Outside Reader's Approval

_____Public Defense

Graduation Check List

In order to graduate

_____ An approved Application to Candidacy (with all necessary attachments, including original transcripts)

_____ A written approval from the outside reader

_____ A completed M-Form

_____ Electronic submission of the dissertation to the Graduate School

_____ Compliance with the Graduate School regulations regarding degree conferral

_____ One hardbound ***and*** CD copy of thesis to the department.

_____ One hardbound or CD (at the discretion of the advisor) copy of thesis to your thesis advisor.

_____ One softbound or CD (at the discretion of the faculty member)of the copy to each faculty member serving on your committee

_____ One unbound copy of the dissertation

_____ One extra copy of title page and abstract (less than 350 words)

_____ Survey of Earned Doctorates

_____ UMI Dissertation Agreement Form

_____ Graduate School Billing Form