

Thesis Option and Comprehensive Exam Option Requirements (Thesis required for MS-GEOI, optional for MS-ESS and MS-GECA)

These are general guidelines for all GGS Master's Programs. After reviewing these, check your academic program for more detailed, degree specific guidelines (if available) on our website and in the official guide of the catalog – catalog.gmu.edu

Choosing an option

Students are not required to declare their choice of the thesis option or comprehensive exam option (if optional) until they wish to begin the graduation process which **begins in the semester prior to the semester in which you intend to graduate**. The choice should be made in consultation with the student's advisor, although the Thesis option is frequently preferred. **Thesis is required for the MS-GEOI.**

Thesis Guidelines

Completing the thesis involves a four-stage process: 1) Establishing a Thesis Committee, 2) Preparing and Defending the Thesis Proposal, 3) Writing the Thesis, 4) Defending and Submitting the Thesis.

A student may not enroll in GGS 799 (Master's Thesis) until they have completed number 1 and 2.

Establishing a Thesis Committee

As soon as a student chooses the thesis option, or if a thesis is required, he/she should form a committee of three including at least two full-time Geography and Geoinformation Science faculty members, one of whom must be the committee chair. The student can request a faculty member other than his/her original advisor to supervise the thesis. A third faculty member, either from GGS, another local academic unit (department, institute, or center), or from outside the university must be added to complete the committee. This person must be a member of the graduate faculty. Those who are not members of the graduate faculty or other appropriate persons not affiliated with GMU may serve as a fourth member if approved by the committee chair. At the discretion of the committee chair, a fourth committee member may be added if they bring additional expertise to the thesis review process. The committee must be approved by the Department Degree Coordinator, the Department Graduate Coordinator or Chair and the College of Science.

The student must complete the [Master's Thesis Committee Designation Form](#) available on the GGS website and obtain all necessary committee and degree coordinator signatures. For GGS Dept final approval and processing to COS, for Dean approval the form should be delivered to the Dept office, Suite 2400, Exploratory Hall.

Preparing and Defending the Thesis Proposal

The student should immediately engage the committee in a discussion of the content of the thesis, and the research program to be pursued. Based on these consultations with the committee members, the student should prepare a thesis proposal. An acceptable proposal must include a clear statement of the research objective, an initial literature review, a discussion of the methods to be employed, a description (usually including graphics) of the data to be employed, and a discussion of the expected outcomes of the research. The student should submit the proposal as early as possible to the committee for comments, and expect to be asked to make changes to the proposal. When the chair determines that the proposal is sufficient, s/he will schedule a defense of the proposal. This defense may consist of an oral presentation or some other format for the exchange of ideas among the committee and the student based on the proposal that has been submitted. The format of the defense is at the discretion of the committee chair. The student must complete the [Master's Thesis Proposal Defense Form](#) available on the GGS website and obtain all necessary committee and degree coordinator signatures. For GGS Dept final approval and processing to COS, for Dean approval the form should be delivered to the Dept office, Suite 2400, Exploratory Hall copy of the proposal must be attached. **A student may not enroll in GGS 799 (Master's Thesis) until the proposal is approved by the committee and the appropriate materials submitted to the GGS Department Office.**

Writing the Thesis

After the proposal has been accepted, submitted, and approved by the GGS Department, the student may enroll in thesis research (GGS 799) at the beginning of the next semester. Students should obtain a copy of the "Individualized Section Form" (<http://registrar.gmu.edu/wp-content/uploads/IS.pdf>) and fill out their information.

The instructor for that class will be the thesis committee chair. Although the student may register for up to 6 credits in any semester, this is entirely at the discretion of the committee chair, and the norm is to be registered for three credits per semester. The first semester of GGS 799, 3 credits are required. Please note: **Graduate students must maintain continuous enrollment while writing and submitting a thesis.** (excludes summer) The content of the thesis is the responsibility of the student, who should rely on frequent input and direction from the committee chair and other members to ensure that it is acceptable. The student is responsible for keeping all committee members informed of the scope, plan, and progress of both the research and the thesis. The thesis must conform to the format and guidelines specified by University Dissertation and Thesis Services. The thesis will not be accepted by the library, and graduation will be delayed if these guidelines are not closely followed. Please consult these guidelines (<http://thesis.gmu.edu/>) early in the process (ideally beginning with the proposal) and frequently throughout the thesis research to ensure an acceptably formatted thesis document. The thesis may only be submitted after the formal defense, but should be checked by the library Thesis Coordinator prior to the defense.

Defending and Submitting the Thesis

When the thesis is finished, the student must give a public presentation to defend the thesis. The thesis committee chair is responsible for administering the thesis defense, including approving the defense, announcing the defense, conducting the defense, and reporting the results of the defense. A defense should be advertised within the department and the College of Science at least one week prior to the defense date (via email and/or posted flyers). Requests for departmental announcements can be addressed to Teri Fede (tfede@gmu.edu) and requests for College of Science announcements can be addressed to (cosdefen@gmu.edu)

The student should give a presentation of the research and results and expect to take questions from the public and the thesis committee. After the public presentation the committee may, at their discretion, conduct a private examination with further questions. The committee will discuss and vote in private and inform the student of the result of the thesis defense. Successfully defended theses must meet the thesis requirements of the university. The student is responsible for knowing the university's deadline for thesis submission (<http://thesis.gmu.edu/>) for the selected graduation term. The deadline is generally no later than 5pm on the Friday prior to the last day of classes for the term. The student and the thesis committee chair should take care that the defense is held early enough to ensure that any requested changes in the thesis can be made, and any formatting issues corrected, prior to the university thesis submission deadline. The original and one copy of the master's thesis with two original signed cover sheets must be deposited with the college/school/institute dean or director for dean/director's signature prior to being transferred to the University Libraries. For degree conferral, two copies with cover sheets signed by committee and dean/director of college/school/institute must be submitted to the library. Please submit a copy of the thesis to the department for retention in our library.

Comprehensive Exam Option (Not an option for MS-GEOI)

If you plan to graduate in the same semester in which you are taking the Comprehensive Exam you must complete the Comprehensive Examination Recording Form prior to the mid-point of the semester in which you will graduate (March 1st for Spring Semester, October 15th for Fall Semester).

If the advisor deems it appropriate a student may choose to take additional courses and complete a comprehensive examination. The examination will be administered by a two-person Departmental full time faculty committee for MS-GECA. For the MS-ESS the examination will be administered by a two to three-person faculty committee, two of which must be full-time GGS faculty. The exam is typically taken near the middle of the semester, but in any case must be completed with sufficient time to make changes (if required) and still meet the deadlines of the university for the semester in which the student expects to graduate.

The purpose of the comprehensive examination is NOT to simply re-hash information or skills learned in class, but rather is to allow the student an opportunity to demonstrate that he or she has mastered the pertinent subjects in the discipline of Geography and Geoinformation Science. This will require the student to be able to show their breadth of

knowledge across the discipline, and the depth of their knowledge in more specific areas of interest. Students should expect to use all of the skills they learned during their time in the program, including the use of GIS, good cartographic practice, problem solving skills, and academic writing including the citation of peer reviewed academic journals.

The student must provide a written statement indicating his or her academic areas of specialty. The content of the exam will be based in part on this statement. The student should schedule at least two meetings with the committee members (all together, individually, or some of both) well in advance of the exam date in order to obtain suggested readings for preparation for the exam, and to discuss the content with the committee. If the committee chair does not feel that the student is sufficiently prepared to take the exam he or she may require that the exam be postponed to the following semester.

Prior to the exam, the student should complete the following steps:

- 1) Prepare the written statement of interests and areas of specialty.
- 2) Download, print, and complete the first part of the [Master's Comprehensive Examination Recording Form](#)
- 3) Approach the members that the student would like to serve as examiners.
 - a. Ask them if they are willing to serve (if not, approach other potential members)
 - b. Present the committee members with the statement of interest
 - c. Decide together on a scheduled date for the examination
 - d. Have everyone sign the Comprehensive Examination Recording Form
- 4) Forward the Comprehensive Examination Recording Form to the MS-ESS or MS-GECA Coordinator who will give it to the GGS Department Office to be held in the student's file until results can be recorded.
- 5) Prepare for the examination at the direction of the committee members. Meet as necessary to clarify any and all content or format issues.

While there is some latitude regarding the format of the comprehensive examination (at the discretion of the committee chair and the Degree coordinator) it is common that the exam will be a take-home exam given over three days (a long weekend, for example). There are generally two questions per day; some questions will be required to be answered, while others may involve some choice of what to answer on the part of the student. Each "question" may in fact consist of several related questions on a single topic.

There are 4 possible outcomes from the committee evaluation of the completed exam:

- 1) Failure – This indicates that the student has not demonstrated a comprehensive mastery of the material. The degree will not be awarded.
- 2) Retake – This indicates that the student has not demonstrated a comprehensive mastery of the material, but the work presented does indicate that such mastery could be demonstrated through an additional exam.
- 3) Conditional Pass – This indicates that the student must make changes or additions to their answers in order to demonstrate comprehensive mastery of the material. The committee will not pass the student, nor will the degree be awarded until the changes have satisfactorily been made. These changes may be minor or major at the discretion of the examining committee. Given that students are being asked to demonstrate mastery of an entire discipline in 3 days, the Conditional Pass result is to be expected and is the most common outcome of the exam.
- 4) Pass – This indicates that the student has demonstrated a comprehensive mastery of the material and has successfully completed the examination.

The committee may - and will frequently - request an oral presentation of the exam questions and answers to the academic community. Degree coordinator will notify the GGS Department Office to record and process the results to COS and the registrar.