

Procedures for a PhD in the Spatial and Earth Sciences Program

Formation of a Committee

Students seeking a PhD are normally pre-assigned an advisor that they have contacted before arriving, and should formally identify a doctoral advisor by the end of the first semester of their enrollment in the program. Early on, the student should confer with their advisor and formally request members for a doctoral committee. It is recommended that students confer with, and identify members to form their committee as soon as they become familiar with Department faculty (no later than the end of their second year). The committee must consist of at least five members of the graduate faculty with at least one member from an area outside of the student's major area of research and study. The committee cannot include more than one special purpose faculty. The student's dissertation advisor serves as Chair of the Dissertation Committee. The purpose of this committee is to approve the student's course of study, conduct and evaluate qualifying examinations, oversee the dissertation, and ultimately determine if the student should be recommended for a PhD degree to the College of Graduate and Professional Studies. The student submits a completed College of Graduate & Professional Studies (CGPS) form to the CGPS and copies for the Committee Chair and Departmental file. The Dean of the College of Graduate and Professional Studies is an ex-officio member of all committees and is responsible for approving the dissertation committee form, which formalizes the committee prior to the proposal defense. Normally, dissertation committee members form the committee that evaluates qualifying exams. Any changes in dissertation or qualifying exam committee membership need to be done with the approval of the student's dissertation advisor. If the student's advisor determines that circumstances warrant changes, the dissertation and qualifying exam committees are not required to have the same members. Members leaving the University, and scheduling conflicts due to sabbatical leaves or extended absences are examples of situations where committee member changes may be warranted.

Contract of Study

Within the first year of doctoral course work, the student should meet with their advisor and complete a first draft of their Contract of Study Form. This form is available from the EES department and it is designed to serve as a tentative plan and schedule, and to ensure that the requirements for the degree are known to the student, and can be met in a timely manner. A completed Contract of Study Form should include the minimum requirements for the degree, the number of planned courses 600 level and above, and the timing of all coursework and requirements needed to complete the degree. The Contract of Study should be updated and reviewed at the end of each semester. Since completion of all requirements is now checked at the Department level before graduation, this form needs to be examined by the student's advisor, and should be included in dissertation proposal and defense presentations. The form must be completed and signed by the student, the student's advisor, and the Dean of the College of Graduate and Professional Studies.

Activity Report

Before the end of each spring semester, each student is required to submit an activity report to the Department Chair and the Committee Chair (advisor). Activity reports should include (but not be limited to) an updated *Curriculum Vitae*, and a separate summary of all published work, outreach activities, academic presentations, courses/labs taught, teaching evaluations from courses/labs taught,

service activities, field trip participation, research activities, grants applied for, grants acquired, Departmental funding received, and grades for courses taken over the past full year. Students who do not submit an activity report may be denied Departmental support for travel, teaching support, etc.

Course Requirements and Proficiency Examinations (Research Tools)

Students must complete a minimum of 65 credit hours of graduate course work, exclusive of the 18 dissertation credit hours. A minimum of 30 credit hours must be obtained within the doctoral program work at ISU. Students must maintain a grade point average of 3.0 (B) or above. At least half of the doctoral course must be in courses numbered 600 or above. Dissertation courses (GEOG 899) should be taken after the qualifying exam; under circumstances where the exam is taken very early in the semester, well BEFORE the deadline to add a course, 899 level courses may be taken in the same semester. Students must include course grades in their annual activity report and in their proposal presentation and dissertation defense.

PhD Candidacy Qualifying Examinations

Qualifying exams are designed to assess the eligibility for a PhD student to continue their course of study within the Spatial and Earth Sciences PhD Program and to qualify as a PhD candidate. Students should begin to discuss the topics of their qualifying examinations with their advisor (and committee members) by the end of their second year or early in their third year to allow time to prepare. Qualifying exams for all concentrations within the department are composed of two elements: a series of written exams and an oral exam. Members of the student's dissertation committee, including the advisor, typically comprise the qualifying exam committee (except in certain circumstances, detailed above). Once the qualifying examinations and core coursework have been successfully completed, a student applies to be admitted to PhD candidacy and can begin registering for at least 18 dissertation research credit hours (GEOG899) that partially fulfill requirements for their degree.

Written Qualifying Examinations

The nature and subject of written qualifying examinations are to be determined by the dissertation committee, with the final approval of questions decided by the committee chair (student's advisor). Questions for the written exam will be generated by committee members and will be designed to assess specific topics related either to the student's current research objectives or the philosophical breadth of the student's understanding of their major area of concentration. Students should be encouraged to talk with committee members well in advance to gauge the scope of questions and topics to be covered during the exam.

Written questions are requested from committee members, reviewed for breadth, overlap and clarity, and compiled and administered by the Committee Chair (student's advisor). All committee members may or may not see all questions before the exam and all answers after the exam. In any case, it is the Committee Chair's obligation to ensure that questions are appropriate and do not overlap. The Committee Chair may choose to use a proctor to help administer exams.

Specifically, written examinations will take one of three formats: 1) a series of closed-book style questions (no access to books, primary literature, or additional information resources) presented over

the course of specified time frame, typically a week, where for a designated number of hours each day (typically 3 to 8 hours) the student's understanding of a different topic, with questions determined by one committee member, is assessed. Committee members would normally provide reading lists well in advance to the student to help define the scope of questions; or 2) a series of open-ended questions that each form the seed of an original composition where the student can utilize any available resources to construct their response, with each topic assigned to be answered within a response period to be determined by each dissertation committee member (typically not more than a week); or 3) a combination of formats 1 and 2 above, where some committee members provide questions for format #1, while others provide questions for format #2. Students should confer with their advisor (and committee) well in advance of the written examinations to clarify the format of the written examinations.

Typically the written qualifying exams will be composed of 4 or 5 different topics, with each committee member being responsible for composition of the questions for one or more topics. The committee chair (student's advisor) in consultation with the student and committee members, sets the dates for administration of the examinations. The student's committee is responsible for evaluating the written qualifying exams, with each member providing written feedback to the student on the answers to their questions, and determining if the student can advance to oral examination. Committee advisors may or may not provide student answers to all questions to all committee members for further evaluation before the oral exam. Committee members should provide written exam evaluations to the student and the Committee Chair within two weeks of the receiving the written exam. Evaluations should include an assessment of strengths and weaknesses of answers. Within two weeks of the exam, each committee member should convey to the Committee Chair whether or not the student passed or failed that section of the exam. Students that fail any section of the written qualifying exams may be required to complete additional assignments to certify their preparation for oral qualifying exams. Students that fail more than two sections of the written exam may fail the written exam, determined at the discretion of the dissertation committee. When there is disagreement at the program level resulting in lack of consensus regarding overall performance, the case will be referred to the department chairperson and dean of the College of Graduate and Professional Studies.

Oral Qualifying Examination

If students are eligible to advance to oral examinations, the oral exam should be scheduled within two weeks of passing the written exam. Oral qualifying exams typically are administered over the course of 2 to 3 hours (no more than 3 hours) in one day and are administered by the dissertation committee. The oral exam, a prerequisite to PhD candidacy, is composed of a series of questions orchestrated by all committee members and can include questions on topics similar to those presented in the written examinations, questions meant to clarify what was presented in the written examination, or additional topics of interest to the student's primary research objectives. Question topics are expected to include any areas of weakness identified by written examinations.

Upon completion of the oral examination, the Qualifying Exam Committee will assess and discuss the student's responses and understanding of the question topics and then vote: pass or fail. The committee must agree to vote. Students may pass if no more than one committee member, other than the advisor, dissents. If warranted, the case can be reviewed by the Department Chair who will consult

and meet with committee members. When there is disagreement at the program level resulting in lack of consensus regarding overall performance, the case will be referred to the department chairperson and dean of the College of Graduate and Professional Studies. If more than one committee member dissents, the student fails the exam. A vote result of 'fail' indicates that the student has been disqualified from PhD candidacy. If the committee unanimously agrees, a student may be allowed to retake the qualifying exams once. A schedule is then agreed upon by the Exam Committee. If the student is unanimously voted as having passed the oral qualifying exams, they can apply to be formally admitted as a PhD candidate within the program. When the student has met all requirements for candidacy, the chairperson of the committee will recommend to the department chairperson, to the appropriate dean, and to the dean of the College of Graduate and Professional Studies that the student be approved for admission to candidacy.

Candidacy

Candidacy for the PhD program requires that a student is adequately prepared in the collective opinion of the doctoral committee. Admission to candidacy requires the completion of minimum residency (a normal course load for two consecutive semesters), demonstration of research tool proficiencies, and passing qualifying examinations. Any provisions placed on the student since entering the program (including incomplete grades and course deficiencies) must be resolved before applying to become a PhD candidate in the program.

Dissertation

All PhD candidates are required to submit a dissertation of original research with a contribution to the field of study that is significant enough that its publication in peer-reviewed literature would be justified. We anticipate that the student will submit at least one manuscript from their dissertation to peer review for publication (preferably several peer-reviewed journal articles or a book) prior to or shortly after their dissertation defense. Dissertation research projects must be proposed at least one semester prior to the dissertation defense date. A dissertation committee (does not have to be, but generally is, the same as the preliminary exam committee) should be formed and officially recognized by the College of Graduate and Professional Studies well before scheduling a proposal defense. The dissertation includes registration of a minimum of 18 hours of dissertation credits (GEOG 899), which occurs following admission to candidacy. Dissertation courses (GEOG 899) should be taken after the qualifying exam; under circumstances where the exam is taken very early in the semester, well BEFORE the deadline to add a course, 899 level courses may be taken in the same semester. Students are required to enroll continuously through fall and spring semesters until they have completed all degree requirements.

Dissertation Proposal

A student can prepare the dissertation proposal only after admission to candidacy. The proposal is a document meant to describe the research that will comprise the dissertation as completely as possible and includes a written component and an oral defense. Note that the proposal should also include a timeline and a projected Contract of study form, showing timing of completion of courses and

requirements for graduation. Typically students provide at least two weeks (unofficial) notice to the department and their committee prior to the dissertation proposal defense. It is up to the student to make certain that the proposal defense is advertised, and all faculty members of the Department notified, at least one week prior to the proposal presentation. In addition, the student will provide a written copy of the proposal to their dissertation committee at least two weeks before the scheduled defense. The dissertation proposal defense occurs under the direction of the student's dissertation advisor and committee and should be open to public attendance. Immediately upon completion of the dissertation proposal defense, the committee will meet in private to assess and discuss the student's proposal and responses to questions, and then vote: pass or fail. Students may pass if no more than one committee member, other than the advisor, dissents. In cases where the committee vote is not unanimous, the case can be reviewed by the Department Chair and Dean of the College of Graduate and Professional Studies. Upon successful completion of the oral dissertation proposal, the signed proposal approval form along with a copy of the proposal must be submitted to the College of Graduate and Professional Studies. It is the student's responsibility to bring an approval form (with typed committee member names) to the defense. Successful completion of the oral dissertation proposal is to be followed (within one month) by a formal submission of the final version of the written proposal to the Department Chair.

Dissertation Defense

At least nine weeks prior to the date the degree is to be conferred and at least two weeks prior to the final oral examination, copies of the dissertation will be made available to all members of the student's doctoral committee. The oral examination may be set at any date convenient to the committee and the student, providing the University is officially open, but must be at least seven weeks prior to the date the degree will be conferred. The time and place of the examination, together with the names of the student, the doctoral committee, and chairperson or dissertation director, and the title of the dissertation must be submitted to the College of Graduate and Professional Studies at least one week prior to the defense. The College of Graduate and Professional Studies will post notification to the campus community. Attendance at the examination is open to any member of the graduate faculty. Other interested individuals may attend the examination at the discretion of the committee chairperson. Immediately upon completion of the dissertation defense, the committee will meet in private to assess and discuss the student's dissertation and responses to questions, and then vote: pass or fail. Students may pass if no more than one committee member, other than the advisor, votes to fail the student. In cases where the committee vote is to fail, the case can be reviewed by the Department Chair and Dean of the College of Graduate and Professional Studies. Within one week following the oral examination, and in no case later than six weeks prior to the date the degree will be conferred, the chairperson of the student's doctoral committee will certify to the department chairperson, the appropriate dean, and the dean of the College of Graduate and Professional Studies the report of the doctoral committee on the oral examination. The College of Graduate and Professional Studies (CGPS) must approve the final copy of the dissertation. To ensure on-time graduation, students must check and comply with all College of Arts and Sciences (CAS) and CGPS deadlines, including CAS review of the

dissertation, CGPS format review, contract of study form submission, dissertation submission, and notification of intent to graduate.

Recommended Schedule for PhD Student Progress

Note that students are responsible to check with the Department, the Graduate College and the College of Arts and Sciences to make sure that all deadlines are met, and forms completed. The following is intended as a guideline, and may not refer to all required documents and deadlines.

Year 1:

1. Appoint/select a dissertation advisor
2. Form a committee - 5 members, one outside department (recommended no later than end of 4th semester)
3. Complete and submit a Contract of Study draft
4. 18 hours of doctoral course work (at least 50% at the 600 level or higher)

Year 2:

1. Identification of dissertation project
2. 18 hours of doctoral course work (at least 50% at the 600 level or higher)
3. Discussion with advisor of schedule and topics of qualifying examinations
4. Revise Contract of Study draft as needed

Year 3:

1. 18 hours of doctoral course work (at least 50% at the 600 level or higher)
2. Qualifying examinations (recommended by end of 6th semester)
3. Application to PhD candidacy submitted
4. Dissertation Committee Form submitted
5. Schedule Dissertation Proposal with Advisor
6. Presentation of Dissertation Proposal (recommended before end of 6th semester)
7. Approval of Dissertation Proposal form submitted (within 1 month after proposal defense)
8. Revise Contract of Study draft as needed

Years 4/5:

1. Complete remaining doctoral course work (total should be 65 credit hours, research tools)
2. At least 18 credit hours of dissertation course work (GEOG 899)
3. Schedule of Dissertation Defense with Advisor and Committee; notification of intent to defend to the Department Chair and the Graduate Coordinator
4. Copies of written dissertation must be submitted to all members of the dissertation committee at least **9 weeks prior** to date degree will be conferred and **2 weeks** before Dissertation Defense
5. Dissertation Defense Notice - 1 week official notice to university, committee, & department
6. Dissertation Defense

7. Within **1 week following** Dissertation Defense - report of the doctoral committee on the oral examination (at least six weeks before degree is to be conferred). Approval of defense submitted with 1 copy of dissertation.
8. Final Contract of Study form submitted for application to graduation.
9. Dissertation submitted for format review to CGPS.
10. Final copy of dissertation submitted to CGPS. Note that the Department Chair and the College of Arts and Sciences also review this document, and it must still get to CGPS before CGPS deadlines.