

NATURAL RESOURCES AND ENVIRONMENT

M UNIVERSITY OF MICHIGAN

Ph.D. Handbook

Table of Contents

Ph.D. General Timeline	1
Overview of Rackham's General Requirements.....	2
Procedures for NRE Doctoral Programs.....	4
Mission.....	4
Advising/Interim Guidance Committee.....	4
Course of Study.....	5
Required Courses.....	5
Course of Study Document.....	6
Preliminary Examination Committee	6
Preliminary Examination.....	8
Written Examination.....	9
Oral Examination.....	9
Dissertation Proposal	11
Proposal Content.....	11
Use of Vertebrate Animals and Human Subjects in Doctoral Research.....	12
Dissertation Committee	12
Roles of the Chair (or Co-Chairs) and Cognate Member	13
Changes in Committee Membership.....	13
Additional Documentation Required	13
Admission to Candidacy.....	14
Satisfactory Progress.....	14
Dissertation Evaluation and Defense.....	15
Final Corrections and Bindings	16
Additional Resources.....	16
Appendices of Forms:	
Appendix A – Annual Progress Report	15
Appendix B - Preliminary Exam Committee and Course of Study	17
Appendix C - Report on the Preliminary Examination.....	19
Appendix D - Dissertation Committee and Dissertation Proposal	21
Appendix E - Revised Dissertation Committee.....	23

PH.D. GENERAL TIMELINE

	Milestones	Timeline
1.	Interim Guidance Committee (IGC) formed.	On admission.
2.	Meeting of Interim Guidance Committee to certify progress and submission of Ph.D. Student Annual Progress Report.	By end of first year.
3.	Course of Study and Preliminary Examination Committee approved by the NRE Associate Dean for Academic Programs.	By the end of the second year.
4.	Schedule and pass the Preliminary Exam. A Preliminary Examination Report is completed by the Committee and submitted to the NRE Office of Academic Programs (OAP). NOTE: Student must be registered for at least one credit hour.	During second or third year.
5.	Dissertation proposal approved by committee and subsequently approved by NRE Associate Dean for Academic Programs.	By end of third year.
6.	The Office of Academic Programs prepares and submits the Nomination for Candidacy and Dissertation Committee forms to Rackham for approval immediately after the Associate Dean for Academic Programs approves the Dissertation Proposal and Committee.	By end of third year.
7.	Dissertation Committee meets and submits Ph.D. Student Annual Progress Report to Office of Academic Programs.	Annually after third year.
8.	Schedule the Dissertation Defense.	
9.	Fulfill requirements of Pre-Defense Meeting	At least ten working days before defense is scheduled
10.	The Committee members submit individual written evaluations of the dissertation to the Rackham Dissertation Secretary.	At least three days prior to date of defense.
11.	The candidate picks up the dissertation defense folder from Rackham.	Thirty minutes prior to the defense.
12.	Pass the Dissertation Defense. NOTE: The student must be registered for eight credits during the term of the defense.	
13.	The Dissertation Committee signs the Dissertation Approval Form.	
14.	The candidate makes any required changes to the dissertation. Final revisions must be submitted within a year of the defense date.	
15.	The Dissertation Committee Chair or designee certifies that all required changes to the dissertation have been made.	
16.	The candidate submits one unbound copy of the dissertation to the bindery and obtains a receipt.	
17.	The candidate submits the completed Dissertation Approval Form, one unbound copy of the dissertation, and the bindery receipt to the Rackham Office of Academic Records and Dissertations.	
18.	Completion of the Ph.D. program.	Within 5 years of achieving candidacy and no longer than seven years from first enrollment.
19.	If additional time is required, a "Petition for Modification or Waiver of Regulation" form must be completed. This form is available in the NRE Office of Academic Programs.	

OVERVIEW OF RACKHAM'S GENERAL REQUIREMENTS

The Ph.D. is granted by the Horace H. Rackham School of Graduate Studies (generally referred to as Rackham). Degree requirements for all doctoral programs can be found in the *Rackham Graduate School Academic Policies*. This Handbook can be found at: <http://www.rackham.umich.edu/policies/article/gsh/>. Section 2.1 discusses policies and procedures related to doctoral students and is the reference for the information contained below unless otherwise noted.

Residence Requirement. At least 18 graduate credit hours must be completed on the Ann Arbor campus. Courses elected for “Visitor” status, NRE 900 (pre-candidacy), and NRE 995 (candidacy) may *not* be used to fulfill the residence requirement. In general, students receiving a master’s degree from NRE will have met this requirement.

Fee Total Requirements. No more than 9 fee totals may be accumulated in a full term (5 in a half term). This does not mean that you cannot elect more than 9 credits, but only a maximum of 9 will be counted toward the necessary number for any full term. The number of required fee totals for the doctoral degree is 68. However, this requirement can be reduced depending on a prior graduate degree. (*Rackham Graduate School Academic Policies*, Section 2.1.2.1).

Students entering the doctoral program with a relevant master’s degree from another accredited institution (i.e., not UM) need 50 fee-credit hours. The determination of whether the prior degree is “relevant” is made by NRE faculty, not Rackham.

Students who have completed a Rackham master’s degree can count all their graduate credits toward the doctoral degree (up to the permitted 9 credits/full term; 5 credits/half term rule).

At least 36 fee hours are required prior to admission to Candidacy (18 fee hours with relevant master’s degree).

Students must be registered for at least 1 credit during the term in which they take prelims, although exceptions to this may apply.

Students must be registered for 8 credits of NRE 995 during the term in which they defend their dissertation.

Any deficiency in fee hours (both the minimum of 36 for Candidacy and the 68 for the Ph.D.) can be made up for by paying tuition at the current rate per credit hour.

Maximum Time Limit. Rackham stipulates that from the time of initial enrollment, Candidacy should be achieved within 3 years, and the Ph.D. should be completed within 7 years. Effective Fall 2007, doctoral students are expected to complete the degree within 5 years of achieving candidacy, but no more than 7 years from first enrollment. Students who do not show sufficient progress may be placed on academic probation for one year, returned to pre-candidacy, or terminated from the program. OARD will notify graduate programs/departments of any students who exceed this limit. A program may request an additional one-year extension, but a student who does not complete the degree after two years of extension beyond the normal limit for candidacy may be returned to precandidacy status and required to meet candidacy requirements again. Rackham will notify programs and departments of students who have not completed their degree within the stipulated period. A student who is dismissed for these reasons may be allowed to apply for readmission. (Section 2.1.2.3)

Cognate Courses. Rackham requires four hours of graduate-level coursework in a field outside the focus of the doctoral work. This may be completed in spirit by the student's prior studies at the master's level or by the NRE distribution requirement. The cognate courses must be approved by the student's advisor.

Admission to Candidacy. Upon completion of NRE's candidacy requirements (discussed at length in this document), the necessary form is filed with NRE's Associate Dean. The Associate Dean's review, in turn, leads to written recommendation from the School to Rackham. (Rackham then certifies that candidacy status has been attained). For students entering in the Fall 2007 term, candidacy should be achieved no later than three calendar years after first enrollment in the program. A student who does not achieve candidacy within three years may be placed on academic probation, unless the program/department asks Rackham OARD for an extension, providing a reason for the request and a timeline for reaching candidacy, and Rackham OARD approves this request. (*section 2.1.1*)

Dissertation Committee. This committee must consist of at least four faculty, including two NRE faculty members plus one qualified cognate member. The Rackham Graduate School Academic Policies <http://www.rackham.umich.edu/policies/article/gsh/> includes a number of Rackham requirements related to the committee's membership and the steps required for its designation. For dissertation committees formed after July 1, 2007, the cognate member may not serve in a dual role as chair or co-chair. (Section 2.1.2.2) The Quick Reference Chart for Membership on the Dissertation Committee is also useful

<http://www.rackham.umich.edu/OARD/pdf/disscommitteeguidelines.pdf>

Defense of Dissertation. A full-term Candidacy enrollment (8 credits of NRE 995) is required when the dissertation defense is held. Students need to check the Rackham Information to ensure that Rackham's requirements for the timing of the defense and for the dissertation itself are met. As of Fall 2007, candidates who defend their dissertations must submit final revisions to OARD within a year of the defense date. A candidate who does not meet this deadline will be required to defend the revised dissertation again. (Section 2.1.2.10)

PROCEDURES FOR NRE DOCTORAL PROGRAMS

The School of Natural Resources and Environment (NRE) offers two doctoral degrees: Ph.D. in Natural Resources and Environment and Ph.D. in Landscape Architecture. The policies, procedures, and requirements for these programs are described below in some detail for the guidance of faculty members and the guidance and protection of students.

Mission

The goal of the doctoral programs is to develop the creative abilities of selected exceptional students—training them for independent research that contributes to original scholarship at the forefront of their chosen fields. These students are expected to become leaders—both in training other professionals and in developing the scientific knowledge base for formulating natural resource policies and management practices that contribute to the sustainable use of natural resources.

The research activities in NRE focus on

- Defining and understanding critical natural and environmental resource problems; and
- Developing knowledge and management strategies to address these problems.

To accomplish these objectives, research is also directed toward

Understanding the structure and function of natural resource and social-behavioral systems; and

Learning how these systems interact to create and solve resource problems.

The doctoral program is highly individualized, tailored to the academic and career goals of each student. As such, no two students in the program are likely to take the identical set of courses. At the same time, the program is guided by a framework to ensure that each student's academic efforts will lead to demonstrated research creativity and competence. Since students in the program come with diverse academic and professional backgrounds, it is important that this framework be interpreted to take advantage both of past accomplishments and of the resources available at the University.

Advising

Admission to the doctoral program includes the assignment of an advisor and one or more faculty members who agree to serve on the student's Interim Guidance Committee (IGC). New students should interact regularly with their advisor and committee members to decide upon courses to take, research topics, sources of funding, and the like. While faculty members expect such interaction, it is up to the student to continue this request for advice. Students should probably meet monthly with an advisor during the first year, and less frequently but regularly after that. Before the end of winter term in the first year, the IGC should meet to review and approve a plan of study for the next year. The plan of study should include courses to be taken, courses already completed, a description of the research activities to be undertaken for the next year, and initial conversations about the Course of Study and Preliminary Exam Committee. The Ph.D. Student Annual Progress Report (Appendix A), submitted to the Office of Academic Programs (OAP), will certify satisfactory progress for that student during the first year of study.

Course of Study

The Course of Study is a plan that delineates how the student proposes to accomplish her/his goals for this degree in a timely fashion. The Course of Study is an important document, but it is not intended to be an unalterable contract. Because it guides the student's course selection and is the basis for the preliminary examination, the Course of Study should be prepared in time for the student's Preliminary Examination Committee approval—no later than the fourth term of enrollment. It is to be expected that subsequent changes may be necessary.

In addition to listing specific courses, the Course of Study must include a statement that explains the intent and goal of the doctoral program, including the areas of theory, methodology and analytics, and application that the student expects to combine in the preliminary examination and dissertation research. Use the Preliminary Exam Committee and Course of Study form (Appendix B). The Preliminary Exam Committee and Course of Study must be approved by the Associate Dean.

The Course of Study should outline a logical series of courses to provide the background for original academic work in the area of emphasis for each student. While the specific courses for such background obviously vary, the structure should follow from the general emphasis areas listed above. In completing the Course of Study, the student should outline courses taken or to be taken in each of three emphasis areas: theory, methods and analytics, and applications. Some courses might apply to more than one emphasis area, but most would count in one area. The course listing should include all courses taken as a graduate student, with courses taken as part of the Ph.D. Program noted clearly. Also, the student must take one course from each category listed above from the University of Michigan as part of his/her doctoral program. In addition to these listings, the student can include undergraduate courses taken in each of these areas. Finally, at least 9 credit hours must be NRE courses.

Required Courses

Because the doctoral degree is a research degree, emphasis is placed on developing the skills to plan, implement, evaluate, and communicate about research. Gaining these skills requires several approaches; some approaches are common to all doctoral students, whereas other approaches are useful in particular kinds of research. To prepare students for carrying out research, the following are required:

Research paradigms. “Research Paradigms” (NRE 741) is typically taken during the first winter term of study. This course offers a conceptual and critical treatment of issues relevant to doing research in natural resource/environmental areas. Topics addressed include the nature of science and criteria for “quality research”; characteristics of the scientific community; research value systems and ethics; and considerations of interdisciplinary research. The course is intended to broaden the students’ perspective of the diversity of research frameworks through class discussions stimulated by assigned readings, as well as workshop problem-solving sessions and occasional guest lectures.

Two analytic courses. Doctoral students are required to take (or have taken previously) at least two courses (400-level or above) that focus on tools of analysis, research design, research evaluation, and/or data collection methods. The particular areas of analytics appropriate to each student will vary. A list of courses that will fulfill the analytic requirement, drawn from the master’s curriculum, are found on the NRE website. Appropriate substitutions to these courses can also be petitioned.

Cognate Course. Rackham requires four hours of graduate-level coursework in a field outside the focus of the doctoral work. You must receive a grade of B- or better in order to fulfill the cognate requirement. In most cases, this requirement has been met by the student’s prior studies at the master’s level or by the NRE distribution requirement. The cognate course must be approved by the student’s advisor.

Course of Study Document

The Course of Study document should be formatted to include the following information:

- 1 A one-page, single-sided statement that explains the intent and goal of the doctoral program including the areas of theory, methodology and analytics, and application that the student expects to combine in the preliminary examination and dissertation research.
- 2 A list of relevant undergraduate courses, including credit hours and grades, organized by content (e.g., biological sciences, physical sciences, social sciences, analytic sciences, etc.).
- 3 A list of relevant graduate-level courses (including credit hours and grades) taken or to be taken. Courses taken as part of the Ph.D. program should be clearly noted, and one course from each emphasis area must be taken at UM as part of the Ph.D. program. These courses should be listed in emphasis areas of:
 - a) Theory, b) Methods and analytics, and c) Applications to show how they contribute to the student’s background.
- 4 An abstract of an undergraduate research project or master’s thesis (if a thesis was written).
- 5 Curriculum vitae.
- 6 Timeline.

Preliminary Examination Committee

A faculty advisor is assigned to a student before the Preliminary Examination Committee (PEC) is formally constituted. It is understood that the Chair of the PEC will subsequently serve as the faculty advisor once the PEC has been formed. Composition of the PEC must meet all of Rackham’s requirements for dissertation committees found in the Rackham Graduate School Academic Policies. In addition, the Preliminary Examination Committee must have the following minimum composition:

- 1 At least four members, two of whom must be from NRE.
- 2 A chair or two co-chairs. The chair or one co-chair must be an NRE faculty member who is a regular member of the Rackham Graduate Faculty.
- 3 A minimum of two NRE members of the Rackham Graduate Faculty (may include adjuncts who must be petitioned to Rackham for approval to serve).
- 4 A minimum of three regular members of the Rackham Graduate Faculty.
- 5 A cognate member who
 - Is familiar with the standards for doctoral research;
 - Holds at least a .50 appointment in a Rackham doctoral program in a related field (not the home program);
 - Does not hold any fraction of an appointment in NRE; and
 - Does not serve as a member of the interdepartmental degree program's steering committee (if the student is enrolled in an interdepartmental degree).

* Faculty who hold only "dry" or "courtesy" appointments (as opposed to funded appointments) in the candidate's field may be considered for cognate membership on the dissertation committee.

During the first term of enrollment, the student should consult with her/his advisor and begin identifying potential members of the Preliminary Examination Committee (PEC). These members may be the same as the interim guidance committee or different. It is appropriate that the student ask faculty members whether they are willing to serve on the PEC. The student should meet with the Committee as soon as possible to review her/his program. The PEC should discuss, revise if necessary, and approve the Course of Study.

The student is responsible for:

- 1 Having members sign the NRE Preliminary Exam Committee form (Appendix B);
- 2 Attaching the approved Course of Study to it; and
- 3 Ensuring that these materials reach the Office of Academic Programs (1520 Dana).

This should be done no later than the end of the fourth term of enrollment. The Office of Academic Programs and the Associate Dean review the Preliminary Examination Committee to see that guidelines are met and that the committee members have approved the Course of Study. If there are questions about the Course of Study, the student or members of the Preliminary Examination Committee may be asked to discuss them.

If for any reason the student and/or Preliminary Exam Committee Chair believes that a revision of the PEC is in the best interests of the student, a recommendation nominating the new members should be submitted to the Associate Dean. The recommendation for revision should include a brief explanation of the reasons for the change.

Preliminary Examination

The preliminary examination's purpose is to enable the candidate to demonstrate fundamental

knowledge of the area of study at an advanced level before embarking on research for the dissertation. It is administered by the Preliminary Examination Committee and should not be scheduled until at least one full term after the Committee has been formally appointed. A student must be enrolled for at least one hour of credit in the term in which the preliminary examination is administered (see *Rackham Graduate School Academic Policies*).

All preliminary examinations have both a written and oral component, but the precise format is determined by the Preliminary Examination Committee and the student to achieve the objectives in the most effective way. The examination should be challenging, stimulating, and leave no doubt in the minds of the Preliminary Examination Committee members or of the student about the student's readiness for advancement to candidacy. The examination should be a constructive experience in bringing together knowledge that is often gained in a fragmentary fashion.

Written Examination

The written component of the examination may be open- or closed-book, or a combination of the two. The format of the examination should be decided upon by the Preliminary Examination Committee and the student well in advance of the date selected, with the rules and procedures clearly understood by all parties. The following are examples of examinations drawn from various formats.

Open-book exam: Each member of the Committee prepares up to two questions that are collated by the Committee Chair and given to the student at a specified time. The student normally is allocated one day to answer questions from each member. Answers are prepared within guidelines of length (e.g., six pages) and format that were previously specified by the Preliminary Examination Committee. A set of answers to all questions should be given to each committee member at least one week prior to the oral examination.

Closed-book exam: Questions are prepared by the committee members and provided to the student as in the case of the open-book examination. Questions are answered within a specified time without the use of references or other resource materials. Answers are assembled, duplicated, and provided to each committee member at least a week prior to the oral examination.

Oral Examination

The student is responsible for arranging a location for the oral examination. Contact, by email, snre.rooms@umich.edu at least three weeks in advance to arrange for a room. The format of the oral examination is decided upon by the Preliminary Examination Committee and the student. A format that has proven workable follows.

Review of the student's preparation. At the start of the oral examination it is usually desirable for the Committee to excuse the student and review her/his record, the written portion of the examination, and other matters before the oral examination begins. The student is then invited to return to the room and the examination proceeds.

Committee questions. Oral-examination questions are intended to confirm for each committee member that the student is ready to advance to candidacy. The written component of the examination may provide a springboard for oral questions, but questions should not be constrained by the boundaries of the written examination. It is most important that all committee members are satisfied with their basis for judgment of the student.

Grading the examination. There are four possible outcomes of the preliminary examination:

- 1 Pass. An unconditional pass.
- 2 Conditional pass. Generally scored as a passing performance, but with deficiencies in one or more areas. Such a score delineates that additional work will be conducted— designed to lead to a satisfactory level of knowledge in the judgment of the committee member or members concerned with the areas of specified weakness. Once the student meets the conditions, the examination is considered a pass, and further examination is not required. The Committee should submit paperwork indicating that the student has met their additional expectations.
- 3 Conditional fail. The candidate fails the examination, but shows sufficient promise for eventual successful completion of the doctorate to justify a second examination. The examination normally will be conducted under the guidelines for an original examination. No student will be allowed more than one repeat of the oral examination.
- 4 Fail. The candidate may not repeat the preliminary examination and is requested to discontinue the doctoral program.

Reporting the examination. At the conclusion of the oral examination, the student is asked to leave the room so that the Committee can discuss the outcome. After a consensus is reached, the student is invited back into the meeting where the outcome of the examination is openly and frankly discussed. If the outcome is conditional, the student will be told of the conditions as judged by the Committee, and such conditions will be confirmed in writing by the Chair, with a copy to the Associate Dean to be added to the student's academic file.

Prior to adjournment, committee members will sign the Report on the Preliminary Examination Form (Appendix C) and the Chair will officially file all transcripts, records of the examination, and other relevant materials with the Office of Academic Programs.

Dissertation Proposal

Advancement to candidacy occurs when a student has completed all requirements of the doctorate degree except the dissertation research. To successfully progress to candidacy, the student must pass his/her preliminary exam. In addition, the student must submit—and have approved—a Dissertation Committee and Proposal. This should all be completed, including the advancement to candidacy, by the end of the third year. The preparation of the proposal is conducted under the direction of the faculty member who is likely to chair the Dissertation Committee.

Submission, discussion, and approval of the proposal may be scheduled as part of the preliminary examination, or it may be scheduled as a separate event. Admission to candidacy does not preclude a student from modifying the proposal or developing a different proposal, provided that the student's Dissertation Committee agrees to the changes.

After the dissertation proposal has been approved by the faculty who are likely to serve on the Dissertation Committee, it is attached to a Dissertation Proposal Form (Appendix D), bearing the signatures of the faculty who approved the proposal, and submitted to the Associate Dean (1520 Dana). S/he reviews it for clarity of objectives, hypotheses, and methodology. If there are questions, s/he will discuss the issues with the student and/or the Committee chair.

Proposal Content

There is no single, prescribed format for all dissertation proposals. Students are encouraged to use formats such as proposals written to the National Science Foundation or other external sponsors. All proposals should include information as requested in the following sections in the order given.

1. Overview (1 page, double-spaced)
 - (a) Overall objective. State in broad terms the general goals of the research.
 - (b) Specific aims/hypotheses. State concisely the precise purpose of the research and what the hypotheses are to be tested.
2. Background (2-3 pages)

Briefly describe the most significant previous work in the field under consideration. Critically evaluate existing knowledge. Specifically identify gaps that the proposed research is intended to fill by relating the specific aims of the proposed research to previous work in the field.
3. Research plan and methodology (4-5 pages).
 - (a) Approach. State how the problem is to be resolved using general terms and relating this general approach to the specific aims and hypotheses to be tested. Use plain language (free of jargon) understandable to faculty who represent a broad range of academic disciplines.
 - (b) Design. Provide specific details of the research design, (e.g., hypotheses, sample sizes, analytical approaches, etc.) and describe the formal analysis to be used to determine the certainty of inductive inferences.
 - (c) Methods and techniques. Provide the technical details of methods to be used in the research.
 - (d) Possible results. Indicate the kinds of results expected and how they will be used to support or refute the hypotheses being tested and/or how they will relate to the specific objectives.
 - (e) Limitations and pitfalls. Indicate the technical pitfalls to the proposed approaches, methods, and techniques. If possible, indicate alternative approaches that might be used to circumvent these possible problems. Indicate the limitations to the interpretation or inferences that can be made from the findings.
4. Work schedule. Provide an estimate of the period during which the research and dissertation writing will occur, and a timeline for important accomplishments.
5. Literature cited.

Use of Vertebrate Animals and Human Subjects in Doctoral Research

University policy and federal law require the review of research projects. This is done to (a) ensure humane treatment and safe use of vertebrate animals, and (b) protect human participants. Before research on a project is actually started, the Dissertation Committee Chair should make clear whether the project involves either vertebrate animals or human participants. If the project does involve such research, the proposal must include one or more of the following forms approved by an appropriate University review committee.

(a) Application to Use Vertebrate Animals in Research, Testing or Instruction
(<http://www.ucuca.umich.edu/formapp.htm>).

(b) Approval Form for Studies Involving Human Subjects
(<http://www.research.umich.edu/proposals/forms/forms.html>).

NRE does not require that dissertation proposals involving vertebrate animals and human participants be reviewed by a University review committee prior to candidacy, but doctoral students should be

aware that such research must be reviewed by a University review committee before the research commences. Federal regulations and University policy require that **all** investigations using human beings as subjects of research be reviewed and approved by an appropriately constituted faculty committee **before** such investigations begin. No dissertation based on human beings as subjects can be accepted without this prior review and approval (*Rackham Graduate School Academic Policies*, Section 2.1.2.4.).

Dissertation Committee

Once the dissertation committee is in place, guidance for the remainder of the student's doctoral program passes to the Dissertation Committee. The membership of the Dissertation Committee is often the same as the Preliminary Examination Committee, but this is not mandatory. The appointment process is initiated by the student and the Preliminary Exam Committee Chair in similar manner as that for the Preliminary Examination Committee (see Dissertation Committee and Proposal form, Appendix D). All of the guidelines applicable to the composition of the Preliminary Examination Committee also apply to the Dissertation Committee. This procedure is needed even if the composition of the Dissertation Committee is the same as the Preliminary Examination Committee.

The Dissertation Committee should meet regularly with the student during candidacy, and at least once a year in winter term to review progress and future plans. The committee should certify at this meeting that satisfactory progress has been made that year. The Ph.D. Student Annual Progress Report (including date and signatures of all committee members) should be forwarded to the Office of Academic Programs (Appendix A).

Roles of the Chair (or Co-Chairs) and Cognate Member

The chair (or each co-chair) is responsible for guiding and encouraging the design and execution of an original, high-quality, doctoral-level research project. The end result of this effort is expected to be a dissertation that makes a substantive contribution to the discipline.

The cognate member's role is to broaden the scholarly representation of the dissertation committee beyond the home program. The cognate member also serves the Graduate School and its faculty by providing a non-specialist's perspective on the quality of the dissertation.

For additional information regarding eligibility and Dissertation Committees, see the chart found in the *Rackham School Academic Policies*, Section 2.1.2. The Quick Reference Chart for Membership on the Dissertation Committee is also useful (<http://www.rackham.umich.edu/downloads/oard/forms/disscommitteeguidelines.pdf>).

Changes in Committee Membership

Membership of the Dissertation Committee may need to change for a variety of reasons. When such changes are occasioned by faculty members' unavailability (e.g., leaving the University for one reason or another) candidates may modify the membership of the Committee simply by submitting a "Revised Dissertation Committee" form (Appendix E) to the Office of Academic Programs.

If, however, at any time in the dissertation process the candidate believes that arrangements with, or disagreements among, committee members are so adverse as to constitute an insurmountable obstacle to successful completion of the dissertation, the candidate may petition for a revised Dissertation Committee. The petition should be submitted directly to the NRE Associate Dean and must contain a full statement of facts as the candidate sees them.

The Associate Dean will review the petition. If necessary, s/he will contact members of the Dissertation Committee (existing or proposed). If the Associate Dean concurs with the petition, s/he

will nominate a revised Dissertation Committee and submits this nomination to Rackham. Approval of this nomination by Rackham constitutes appointment of a revised Dissertation Committee. Notification of such action is handled in accord with standard Rackham procedures.

Additional Documentation Required

Any changes in the composition of the doctoral committee must be submitted for approval by the Graduate School using the Dissertation Committee Form. In the following cases, additional documentation is required, as specified:

- **Retired and *Emeriti* Professors Nominated to Serve as Sole Chair or Cognate Member:** The completed Dissertation Committee Form must be accompanied by a memorandum, signed by the faculty member's chair and by the dean of his/her school or college, requesting the appointment and affirming the professor's experience in teaching, advising and dissertation committee service. Once approved, the appointment will be in effect for 3 years and may be renewed with the approval of the faculty member's chair and dean, and the Dean of the Graduate School.
- **University Faculty and Staff Not Included on Pages 29-32 of the Dissertation Handbook, or Individuals Outside the University:** When individuals in these categories are nominated for dissertation committee service, the completed Dissertation Committee Form must be accompanied by
 - (a) A memorandum from NRE's Associate Dean describing the individual's qualifications for dissertation committee service; and
 - (b) A copy of the nominee's *curriculum vitae*.

Admission to Candidacy

After the student has passed the preliminary examination (and has met any and all conditions), and after her/his dissertation committee and proposal has been approved by the Associate Dean, the School recommends to Rackham that the student be admitted to candidacy. In the event that the recommendation of the Dissertation Committee is not approved, every attempt will be made in a joint meeting of the Associate Dean and the proposed Dissertation Committee to reach a mutually agreeable decision. After receiving additional information from the Dissertation Committee, or after a joint meeting with it, the Associate Dean will forward the candidacy recommendation to Rackham in time for Rackham's posted deadlines.

Satisfactory Progress

Satisfactory progress through the Ph.D. program will be certified every year, by the student, advisor, and committee. This will include:

- (1) Certification at the end of year 1 by the advisor and an Interim Guidance Committee (IGC) of two or more faculty members, based on courses taken, coursework planned, and research plan for year 2 in the form of a Ph.D. Student Annual Progress Report (Appendix A).
- (2) Certification at the end of year 2 by the Preliminary Exam Committee (PEC) based on the completed Course of Study Form.
- (3) Certification at the end of year 3 by advancement to candidacy.
- (4) Certification at the end of each year of candidacy, by the Dissertation Committee, based on a meeting and written documentation of research progress and plans in the form of the Ph.D. Student Annual Progress Report (Appendix A).

Certification of satisfactory progress is required annually for Ph.D. students to maintain normal status. Students who are not certified for satisfactory progress will be ineligible to apply for Graduate Student Instructor (GSI) positions in NRE and in the Program in the Environment, and also will be ineligible to apply for NRE or Rackham funding that requires a signature from the Associate Dean.

Satisfactory progress requires timely completion of a number of milestones. In some cases, illness, parenting needs, parental care, or other extenuating circumstances may result in slower progress than would normally be expected. Students who have significant life events that affect their ability to complete their milestones should notify their committee and apply for a milestone extension through NRE. This would be approved by the NRE Ph.D. Committee, and when approved would grant the student extensions for the deadlines of satisfactory progress. In some cases, further permission to extend time to degree would be petitioned to Rackham.

Dissertation Evaluation and Defense

Members of Dissertation Committees vary in the degree to which they interact with students during the writing stage. Students should meet with all committee members to clarify mutual expectations. The dissertation defense should be scheduled once the Chair of the Dissertation Committee is satisfied that the final draft of the dissertation is acceptable to a majority of the Committee. All requirements, including those that follow, must be met by the final Office of Academic Records and Dissertations (OARD) deadline to avoid having to register for another term. Deadlines are available on the [OARD website](#). To set the final process in motion, the student should arrange and attend a Pre-Defense meeting with a Student Services Specialist in OARD or make arrangements with OARD to handle this process by mail. The purpose of the meeting, which should take place at least 10 working days before the oral defense, is to see if your dissertation meets Rackham requirements and to provide you with the dissertation committee evaluation forms and the paperwork you must complete before receiving your degree (see Post-Defense Meeting below). You must also provide the date, time of day, and location of your oral defense at this time. Since Rackham requires that oral defenses be public events, OARD will publicize the information.

After approval by the Office of Academic Records and Dissertations, one copy of the dissertation, along with the Rackham Dissertation Evaluation Form, is distributed by the candidate to each Dissertation Committee member. Each committee member completes an independent evaluation of the dissertation and conveys written opinions to the OARD on the dissertation evaluation form. These forms must be received by the OARD no later than three days prior to the date of the oral defense. The form requests evaluation of the scholarship, originality, contribution, quality of the writing, and quality of the dissertation. In addition, both the dissertation and the abstract are rated for acceptability (without revision, with minor revisions, with major revisions, or unacceptable). It is a good idea to check with OARD to ensure that the completed evaluation forms have been returned.

Prior to the defense, the candidate picks up the folder from the OARD containing the completed evaluation forms and a form, signed by the Rackham School Dean, that authorizes the defense.

Be sure the student and the committee know that Rackham policy requires that the oral defense must be conducted as a public event, (except for the Committee's private deliberations either before or after the defense), open to all interested persons.

At the conclusion of the defense, the committee members should meet in executive session and sign the Rackham dissertation approval form. The Committee may delegate to one or more of its members the responsibility for checking the final draft to see that required changes are made. The Chair is the most common delegate. The Chair should also ensure that the identity of the person(s) who will certify that all corrections have been made is clearly noted on the form.

As of Fall 2007, candidates who defend their dissertations must submit final revisions to OARD within a year of the defense date. A candidate who does not meet this deadline will be required to defend the revised dissertation again. (*Section 2.1.2.10*)

Final Corrections and Bindings

After the defense, and before taking copies of the dissertation to the bindery, the candidate must make any changes that the Committee has required. When the corrections have been made, the designated representative(s) of the Dissertation Committee will sign the Certificate of Dissertation Approval to verify that all required changes have been completed. The completed form, together with one unbound copy of the dissertation, must be delivered to the OARD in the post-defense meeting, who sends it to University Microfilms. The student also must deliver one unbound copy to a bindery and present the bindery receipt to the OARD. The student eventually returns the bound copy to the OARD, who sends it to the Graduate Library. It is customary for the student to present a complete, bound copy of the dissertation to each member of the Committee (members may require this).

Additional Resources

Rackham Graduate School Academic Policies:

<http://www.rackham.umich.edu/policies/article/gsh/>

Dissertation Handbook:

http://www.rackham.umich.edu/student_life/publications/dissertation_handbook/

Ph.D. Defense and Candidacy Deadlines: (allow two weeks for internal NRE processing of documents before submission to Rackham)

http://www.rackham.umich.edu/doctoral_students/

Rackham Ph.D. forms: <http://www.rackham.umich.edu/policies/>

Appendix A



Ph.D. Student Annual Progress Report

The Annual Report is to be completed by SNRE doctoral students every year, submitted to their committees (at either a meeting of the whole committee or agreed to separately,) and submitted to the Associate Dean by May 31.

Student Name: _____ **Meeting Date:** _____

Address: _____

Student UM ID _____ Email _____

Program Name _____ Program Number _____

The student should address the following questions on attached pages (with no more than two-three pages being submitted).

1. Please review the goals of this past year (as outlined in a previous Annual Report or as negotiated with your committee). What progress have you made toward your goals?
2. Indicate the goals you did not achieve this past year and the reasons you were not able to achieve them.
3. Please indicate your goals for the coming year and plans for accomplishing them.

For the committee:

1. The student has accomplished all goals indicated in last year's statement. Yes___ No___
n/a___
2. The student has accomplished only some of his/her goals for the year. Yes___ No___
n/a___
3. The student has clear & sound plans for achieving goals for the coming year. Yes___ No___
4. The student is making satisfactory progress toward degree. Yes___ No___
5. If student is not making satisfactory progress, are there extenuating circumstances that should be considered in determining the student's eligibility to compete for financial aid opportunities? (Chair must provide additional explanation.)

Committee Members' Signatures	Print Name	UMID (required)
Chair:		
Cognate:		

***Committee Chair: Please return this form to the Office of Academic Programs, Room 1520 Dana, by May 31**

This page intentionally left blank

Appendix B



PRELIMINARY EXAM COMMITTEE AND COURSE OF STUDY

- A Request for Approval -

The attached Course of Study for _____, which includes the information listed below*, has been approved by the proposed members of the Preliminary Exam Committee. Please approve the Course of Study and membership of the Committee.

Student UMID _____ Email _____

Address: _____

Program Name: _____ Program Number _____

Committee Members' Name & Signatures	Title	Department	UM ID (required)
Chair			
<i>Print</i>			
Member			
<i>Print</i>			
Member			
<i>Print</i>			
Member			
<i>Print</i>			
Member			
<i>Print</i>			

The Course of Study should include the following information:

1. **REQUIRED:** A 1-page, single sided (maximum) ABSTRACT that demonstrates that the goals of your doctoral research can be met given your background, the resources available, and the theory and methods you expect to apply.
2. A list of undergraduate courses, including credit hours and grades, organized by content (e.g., biological sciences, physical sciences, asocial sciences, analytic sciences etc).
3. A list of relevant graduate-level courses (including credit hour and grades) taken or to be taken. These courses should be listed in emphasis areas of theory, methods and analytics, and applications to show how they contribute to the student's background. Courses taken as part of the Ph.D. program should be clearly denoted, and one course from each emphasis area must be taken at UM as part of the Ph.D. program.
4. An abstract of an undergraduate research project or master's thesis (if a thesis was completed).
5. Curriculum vita.

Preliminary Examination Committee

Composition of the Preliminary Examination Committee must meet all of Rackham’s requirements for dissertation committees (see [Rackham Student Handbook](http://www.rackham.umich.edu/StudentInfo/Publications/DissertationHandbook/), <http://www.rackham.umich.edu/StudentInfo/Publications/DissertationHandbook/>).

In addition, the Preliminary Examination Committee must have the following minimum composition:

1. At least four members, two of whom must be from SNRE. (In the case of students in the joint Natural Resources Economics doctoral program, two members must be from SNRE and two members must be from the Department of Economics).
2. A chair or two co-chairs; the chair or one co-chair must be an SNRE faculty member who is a regular member of the Graduate faculty.
3. A minimum of two SNRE members of the Graduate Faculty (includes adjuncts).
4. A non-SNRE (external or cognate) faculty member who is a regular Graduate Faculty member. At least one member of the Committee must be from outside the student’s major area of specialization. The outside member must be a regular Graduate Faculty member who does not hold any fraction of an appointment in SNRE.

Previous faculty advisor (if different from the Chair).

Signature states that the previous faculty advisor is aware of the Preliminary Examination committee membership and is no longer responsible for advising the student.

Signature: _____ Date: _____

Printed Name: _____

Preliminary Examination Committee Revision

If for any reason the student and/or Preliminary Examination Committee Chair believe that a revision of the Preliminary Examination Committee is in the best interests of the student, a recommendation nominating the new members should be submitted to the Academic Affairs Committee. The recommendation for revision should include a brief explanation of the reasons for the change.

Appendix C



REPORT ON THE PRELIMINARY EXAMINATION

Student Name: _____ Exam Date: _____

Address: _____

Student UM ID _____ Email _____

Program Name _____ Program Number _____

Results of the exam: **PASS** **COND. PASS*** **COND. FAIL*** **FAIL**

*Conditions to be met: _____

- Note: When conditions are met, the Chair should make confirmation in writing, with a copy to the student and the Associate Dean.

Deadline for meeting conditions: _____ Will another exam be necessary? ___NO ___YES

Committee Members' Signatures	Print Name	UMID (required)
Chair:		
Cognate:		

Additional Comments and Recommendations

***Committee Chair: Please return this form to the Office of Academic Programs, Room 1520 Dana.**

This page intentionally left blank

Appendix D



DISSERTATION COMMITTEE AND PROPOSAL - Page 1 - A request for approval -

The attached **Dissertation Proposal** for _____, which includes the information listed below,* has been approved by the proposed members of the Dissertation Committee. Please approve the Dissertation Proposal and membership of the Committee.

Student UMID _____ **Date** _____

Address: _____ **Email:** _____

Program Name _____ **Program Number** _____

Committee Members' Name & Signature	Title	Department	UM ID #
Chair/Co-chair:			
<i>Print</i>			
Co-chair/Member			
<i>Print</i>			
Member			
<i>Print</i>			
Member			
<i>Print</i>			
Cognate			
<i>Print</i>			

Suggested Dissertation Proposal format:

1. Overview (1 page, double-spaced) a) overall objective b) specific aims/hypotheses
2. Background (2-3 pages)
3. Research Plan & Methodology (4-5 pages) a) approach b) design c) methods and techniques d) possible results e) limitations and pitfalls
4. Timeline
5. Literature Cited

Appendix D—continued DISSERTATION

COMMITTEE AND PROPOSAL - Page 2

Once the dissertation committee is in place, guidance for the remainder of the student’s doctoral program passes to the Dissertation Committee. The membership of the Dissertation Committee is often the same as the Preliminary Examination Committee, but this is not mandatory. The appointment process is initiated by the student and the Preliminary Exam Committee Chair in similar manner as that for the Preliminary Examination Committee (see Dissertation Committee and Proposal form, Appendix D). All of the guidelines applicable to the composition of the Preliminary Examination Committee also apply to the Dissertation Committee. This procedure is needed even if the composition of the Dissertation Committee is the same as the Preliminary Examination Committee.

Composition of the Dissertation Committee must meet all of Rackham’s requirements for dissertation committees (see *Rackham Graduate School Academic Policies*, <http://www.rackham.umich.edu/policies/article/gsh/>).

In addition, the Dissertation Committee must meet the following minimum composition:

- 1 At least four members, two of whom must be from NRE
- 2 A chair or two co-chairs. The chair or one co-chair must be an NRE faculty member who is a regular member of the Rackham Graduate Faculty.
- 3 A minimum of two NRE members of the Rackham Graduate Faculty (may include adjuncts who must be petitioned to Rackham for approval to serve).
- 4 A minimum of three regular members of the Rackham Graduate Faculty.
- 5. A cognate member who
 - Is familiar with the standards for doctoral research;
 - Holds at least a .50 appointment in a Rackham doctoral program in a related field (not the home program);
 - Does not hold any fraction of an appointment in NRE; and
 - Does not serve as a member of the interdepartmental degree program’s steering committee (if the student is enrolled in an interdepartmental degree).

* Faculty who hold only “dry” or “courtesy” appointments (as opposed to funded appointments) in the candidate’s field may be considered for cognate membership on the dissertation committee.

.....

Preliminary Examination Committee Chair (if different from the Dissertation Committee Chair).

Signature states that the Preliminary Examination Committee Chair is aware of the Dissertation Committee membership and is no longer responsible for advising the student.

Signature:

Date:

Printed Name:

.....

If for any reason the student and/or Dissertation Chair believe that a revision of the Dissertation Committee is in the best interests of the student, a recommendation nominating the new members should be submitted to the Academic Affairs Committee. The recommendation for revision should include a brief explanation of the reasons for the change.

Appendix E



REVISED DISSERTATION COMMITTEE

-- A request for approval --

Please approve the revised membership of the dissertation committee for

Student Name _____ Date _____

Student UM ID _____ Email _____

Address _____

Program Name _____ Program Number _____

Committee Members' Signatures	Print Name	Title	Dept.	UMID (required)
Chair				
Co-Chair/Member				
Cognate				

PLEASE RETURN THIS FORM TO
OFFICE OF ACADEMIC PROGRAMS
ROOM 1520 DANA

Date Approved by Associate
Dean

REVISED DISSERTATION COMMITTEE

Changes in Committee Membership

Membership of the Dissertation Committee may need to change for a variety of reasons. When such changes are occasioned by faculty members' unavailability (e.g., leaving the University for one reason or another) candidates may modify the membership of the Committee simply by submitting a "Revised Dissertation Committee" form to the Academic Affairs Committee.

If, however, at any time in the dissertation process the candidate believes that arrangements with, or disagreements among, committee members are so adverse as to constitute an insurmountable obstacle to successful completion of the dissertation, the candidate may petition for a revised Dissertation Committee. The petition should be submitted directly to the SNRE Associate Dean and must contain a full statement of facts as the candidate sees them.

The Academic Affairs Committee, which may make any contact with members of the Dissertation Committee (existing or proposed), will review the petition that it deems necessary. If a member of the Academic Affairs Committee is in a controversial role on the candidate's Dissertation Committee, the Associate Dean will usually ask that member not to participate in the review.

If the Academic Affairs Committee concurs with the petition, the Academic Affairs Committee nominates a revised Dissertation Committee and submits this nomination to Rackham. Approval of this nomination by Rackham constitutes appointment of a revised Dissertation Committee. Notification of such action is handled in accord with standard Rackham procedures.