

VII. THE DOCTOR OF PHILOSOPHY DEGREE

The Doctor of Philosophy (PhD) graduate degree program enables students to extend knowledge and expertise from their natural and social science background in their baccalaureate and masters degrees. The primary focus of the program is to provide an opportunity for graduates coming from diverse academic backgrounds to gain a science-based education in forest and natural resources management. Graduates will successfully function as researchers, educators, administrators, managers, and consultants and respond to the challenges related to the sustainable management of local, regional and global resources.

The program is open to both students with some prior background in forestry and natural resources and for those without such background. Students with degrees in a related discipline (e.g., ecology, biology, wildlife, chemistry, etc.) can complete the PhD degree in three (3) to five (5) years. Students with a general science background, but little or no forest or natural resources experience, will require more than five (5) years to complete the program.

The Department of Forest and Natural Resources Management (FNRM) uses a checklist to facilitate detailed program planning and to document of the steps required for graduation (see below). Major professors keep a version of the checklist with student-specific information in their advising files. Each student is encouraged to keep an updated personal copy. Checklists are available in the FNRM Office (320 Bray Hall).

A few graduate students manage to complete their entire degree programs without having to file a single petition. However, because of our students' diverse backgrounds, interests, degree programs, and personal lives, many of our students occasionally find themselves in violation of some College or FNRM policy, or find a need to create proper documentation for their academic file. The correct vehicle to use is a Petition (see Appendix A for more information on petitions). Petition forms may be obtained from the Registrar's Office (111 Bray Hall).

Prerequisites

Students are accepted into our programs with a variety of backgrounds. Deficiencies in undergraduate-level English, ecology, forestry, soils, or statistics may have been identified in your letter of admission. If not completed prior to matriculation, appropriate classes should be taken during residence. Either undergraduate or graduate courses may be taken to remedy deficiencies, depending on the circumstance. Undergraduate courses are not included in grade point averages, and do not count toward satisfying the minimum number of required graduate credit hours.

Transfer Credit

Up to six (6) credits of graduate coursework **not used to complete any other graduate degree** may be accepted toward completion of a doctoral degree as approved by your steering committee. Up to thirty (30) credits of graduate level coursework **earned as part**

of a conferred master's degree may be transferred (by petition) toward your doctoral degree as approved by your steering committee. Students may transfer up to nine (9) credits of credit-bearing **non-degree ESF** graduate coursework (e.g., credit-bearing graduate coursework taken as a non-matriculated ESF student) toward a doctoral degree. Credit hours appropriate to the graduate degree in which a minimum grade of B was earned from an accredited institution can be transferred to the college, but grades and grade points cannot be transferred. All transfer credit will remain tentative until official, final transcripts are received. In addition, all transfer credits must be approved by the steering committee and by the Graduate Education Committee via a petition. Research credits do not transfer.

Steering Committee

You will have a steering committee that provides advice about your coursework and other aspects of the program. The steering committee is composed of the major professor, who is assigned to the student at admission, and at least two other faculty members or other qualified persons. A new major professor, different from the assigned, can be assigned by submitting a new Form 2A (available from the ESF Office of Instruction and Graduate Studies (OIGS) (227 Bray Hall) and at www.esf.edu/graduate/graddegreq.htm). Two co-major professors count as two committee members. You, in consultation with your major professor, chose who will be on your steering committee during the first semester. Doctoral students must have a minimum of a major professor and two (2) steering committee members.

To have your steering committee assigned, your major professor must submit Form 2A Steering Committee (available from OIGS (227 Bray Hall) and at www.esf.edu/graduate/graddegreq.htm). This form must be signed by the Chair of the Graduate Education Committee and recorded by the FNRM Graduate Education Secretary.

As a graduate student, you are responsible and accountable for your progress. You should meet at least once a year with your steering committee, but frequent informal meetings with your major professor and individual committee members are strongly encouraged.

Coursework Requirements and Guidelines

The PhD degree requires a minimum of sixty (60) total graduate credit hours. A total of forty-eight (48) hours in graduate coursework are required, of which twenty-four (24) credit hours must be taken in residence at ESF. PhD students must complete at least twelve (12) credit hours of thesis research credit (FOR 999: Doctoral Dissertation). Concurrent degree students may “double-count” twelve (12) credit hours toward their PhD degree. These general graduate requirements set by the College (see the College Catalog, available at www.esf.edu/catalog). Students develop programs of study to satisfy their coursework requirement in consultation with their major professor and steering committee. Coursework should provide a coherent body of theory, a set of appropriate methods to test that theory, and should focus on an important area of application beyond

the specific work done for the graduate degree (see Appendix C for guidance in coursework).

In addition to FNRM has established the following specific requirements:

Seminars

All PhD students must take two (2) topical seminars, at least one of which must be a FOR 797 topical seminar. FOR 690 Seminar and Workshop: Natural Resources Policy and Management can be used to meet this requirement.

Capstone

All PhD students must present a capstone seminar on their thesis/dissertation work. The student's presentation in a FOR 797 course may be used as the capstone seminar if it is so advertised. You should submit all of your capstone information to the FNRM Office (320 Bray Hall). You will need to set up the time, date, and location of your capstone after checking with your major professor and steering committee members. This information must be given to the Graduate Secretary (Ms. Tari Pittenger, 320 Bray Hall), at least two (2) weeks in advance of your capstone. Capstones will not be scheduled with less than two weeks notice. Ms. Tari Pittenger will produce a flyer and have copies posted around campus.

600-level and Resident Courses

As noted above, PhD students must complete at least sixty (60) graduate credits (forty-eight (48) coursework credits and twelve (12) thesis research credits). Twenty-four (24) coursework credit hours must be at the 600-level or above. No more than four (4) credits of seminar can be counted as part of the twenty-four (24) 600-level or above coursework requirement.

Environmental and Natural Resources Policy Students

The PhD Program in Environmental and Natural Resources Policy is offered by both FNRM and the Department of Environmental Studies. The requirements are identical. Conceptually, doctoral students are expected to be able to integrate the biophysical sciences and policy-related social sciences to solve important problems in environmental and natural resources policy. There are four core competencies:

- 1) Biophysical Science (twelve (12) credit hours of 600 level courses in a definable area of biophysical competency e.g. forestry, wetlands, conservation biology, water resources, etc.),
- 2) Policy-Related Social Science (twelve (12) hours of 600 level policy-related social science including at least one 600 level government course and one 600 level economics course),
- 3) Research Methods (twelve (12) credit hours of 600 or higher level courses in research methods (required) and qualitative methods, quantitative methods or GIS and spatial statistics), and

- 4) Advanced Natural Resource and Environmental Policy (twelve (12) credit hours at the 700 level in policy analysis, program evaluation and two additional policy courses).

Additionally, Environmental and Natural Resource Policy students ***must*** fill out the FNRM “Environmental and Natural Resources Policy PhD Course List” (see Appendix E) and submit it with your Form 3B. The “Environmental and Natural Resources Policy PhD Course List” ***must*** contain all courses listed on the Form 3B and demonstrate how these courses fulfill the Environmental and Natural Resources Policy PhD requirements. This list is used to verify that students have chosen courses that meet this degree requirement.

Student Study Plan

After forming your steering committee, you ***must*** fill out Form 3B: Graduate Student Program (available from the Office of Instruction and Graduate Studies (OIGS) (227 Bray Hall) and at www.esf.edu/graduate/graddegreq.htm). This form ***must*** be signed by your major professor, all of the members of your steering committee, and the Chair of the Graduate Education Committee. The FNRM Graduate Secretary (Ms. Tari Pittenger, 320 Bray Hall), records the form and forwards it to OIGS for approval. Once approved, Form 3B serves as an institutional endorsement of your graduate program of study and protects you by officially stating what courses you will complete and when you will complete them, and how you will complete your thesis requirements. Students that change their program of study ***must*** submit an updated Form 3B (signed by your major professor, all of the members of your steering committee, and the Chair of the Graduate Education Committee) to the FNRM Graduate Secretary (Ms. Tari Pittenger, 320 Bray Hall).

Preliminary Examination

This examination assesses the students’ basic knowledge in the chosen field of study. The results of this examination may be used to determine a student’s suitability for a doctoral program, suitability for continuation in the doctoral program, or as a guide in selecting coursework and developing a program of study. The examination is optional; a student’s major professor and steering committee determine if a student must complete this examination.

Dissertation Proposal

Before your research is very far underway, you ***must*** write a study proposal that documents your plan for dissertation work. The proposal should be given to your major professor and each member of your steering committee. You must also submit a copy to Ms. Tari Pittenger for your file record. As the proposal and plan is revised and added to, copies should again be provided to all committee members and your file. Your proposal should include: 1) a description of the study problem (significance and rationale), 2) goals and objectives for solving that problem, 3) a literature review discussing our current knowledge of the problem, 4) conceptual framework (theory and hypotheses) for the pursuit of new knowledge, and 5) detailed methods for achieving the objectives and testing the hypotheses.

Doctoral Candidacy Examination

After completion of the majority of graduate coursework, PhD students take a candidacy examination. To initiate your doctoral candidacy examination, you must complete Form 6B Request Chair of Doctoral Candidacy Exam (available at <http://www.esf.edu/graduate/docexam.htm>), submit it to the Chair of the Graduate Education Committee and forward the signed form to the Office of Instruction and Graduate Studies (OIGS). At least one (1) additional faculty member or other qualified person (a minimum of four (4) examiners are required for doctoral candidacy examination) must be added to the committee for the examination. The OIGS will officially appoint your committee and send you Form 6C. They also appoint a chair from another Department, who will oversee the administration of the exam. You should then contact all the members of the committee, including the chair, to schedule a planning meeting for your examination.

The objectives of this examination are to determine the breadth and depth of knowledge in the chosen field of study and assess the student's understanding of the scientific process. The doctoral candidacy examination is taken when the majority of coursework is completed and no more than three years from the first date of matriculation has elapsed or the student may be dismissed from the doctoral program. This examination must be taken at least one year prior to the dissertation defense. The examination must have both written and oral components.

The role of the examination committee chair is to manage the examination, ensure its integrity and represent the interests of the faculty and student. Any member of the faculty may be an observer. You may invite a silent student observer to attend the oral examination.

Written Examination: The examining committee shall convene at a planning meeting with the student. During the first part of the planning meeting, the committee determines the schedule for the process and establishes the date for the oral component. The student is then excused from the meeting and the committee develops and discusses the exam content. There are two alternative forms for the written component, as follows:

1. Form 1: The members of the committee submit questions or problems addressing the objectives of the exam. The questions are discussed and agreed upon at the planning meeting. The major professor administers the written examination. Usually, one-half day is allocated to questions submitted by each examiner. Upon completion by the student, the examination questions are reviewed and graded by the committee members who prepared them. The committee then reviews the entire examination.
2. Form 2: The student prepares a written report on a topic or problem assigned by the examining committee. The topic or problem must meet the objectives of this examination and its content cannot be directly related to the student's thesis research. The student has approximately one month to develop a thorough understanding of the assigned topic and prepare a written report. The report is reviewed by the committee members and committee chair.

To schedule a doctoral candidacy examination, please complete the following steps:

1. In consultation with your major professor, complete Form 6B for your Department Chairperson to review, sign, and forward to the Office of Instruction and Graduate Studies. Form 6B should be submitted according to the academic year deadlines for defense exams.

The Dean of Instruction and Graduate Studies will assign a faculty member outside of your degree program to serve as chair of your examination committee.

2. When you receive a copy of Form 6C which officially appoints your examination committee, you must consult with all members of your committee (major professor, steering committee, additional examiner, and defense chair to arrange a mutually convenient date, time, and location for a planning meeting.
3. You must inform the Office of Instruction and Graduate Studies of the agreed upon date, time, and location for your planning meeting at least two weeks in advance of the date. This Office will confirm in Form 6D these arrangements with all concerned individuals.
4. At the planning meeting, your exam chair and the committee complete Form 6E, the committee chair will sign it and return it to the Office of Instruction and Graduate Studies, which will distribute copies to you and the committee.

If you are using Form 1 of the examination, you and your major professor should arrange for a time and location to administer the questions. The last step is to meet with your committee and complete the oral examination at the designated date. At the end of the oral examination, your committee will ask you and any observers to leave the room while it determines if you have satisfactorily completed the doctoral candidacy examination. You will be invited back to receive the decision of the committee which will also be reported on Form 6F and returned by the exam chair to the Office of Instruction and Graduate Studies.

Dissertation

A focal point of doctoral graduate study is the dissertation. A dissertation is a document that clearly demonstrates your graduate level accomplishments. It details the results of your scholarly endeavor and is the subject of the dissertation defense. The dissertation defense must take place no less than one (1) year, and no more than three (3) years, after the candidacy examination. This is an important point that requires some planning on your part.

A PhD dissertation is different from an MS thesis in the depth and breadth of performance demonstrated. A PhD dissertation should portray that the student has: 1) a complete understanding of the state of knowledge in the field of study, 2) conducted a research program at a conceptual level, often demonstrated by the reformulation or creation of theories with new knowledge developed as original work through the formulation and testing of hypotheses, and (3) demonstrated skills in research tool use

(e.g., statistics) and methods. Dissertations that fulfill these aspects should lead to a number of refereed articles in highly influential journals.

FNRM accepts two dissertation styles: 1) the traditional style or 2) the manuscript style. The traditional style is described at www.esf.edu/graduate/thesisdiss.htm. Directions for preparation of a manuscript style dissertation is available in Appendix D. Examples of title page, abstract, and vita page are available at the web page noted above. PhD students and their major professors and steering committees decide which style – traditional vs. manuscript – is appropriate for each student.

Dissertation Defense Examination

The dissertation defense is conducted by your steering committee and two (2) or more additional examiners, for a minimum total examining committee of five (5) persons. In addition, the Dean of Instruction and Graduate Studies (OIGS) appoints a faculty member from outside FNRM to supervise the examination. Students must fill out Form 5B: Request to Appoint Defense of Thesis/Dissertation Examination Committee (available from the OIGS (227 Bray Hall) and at www.esf.edu/graduate/defense.htm) to appoint a thesis examination committee. When the OIGS receives the signed form, a chair will be appointed for the defense. You will then receive Form 5C, which officially appoints your committee, at which time you need to contact all members of the committee, including the chair, to schedule your defense.

The student is responsible for working with the major professor, OIGS, and all examining committee members to plan the examination and meet all deadlines for delivery of materials. Form 5B should be submitted to the OIGS at least one (1) month prior to the anticipated defense date. The student must inform OIGS of the agreed upon date, time, and location for the defense at least two (2) weeks in advance of the defense date.

A final draft of the thesis must be delivered to each member of the Defense Committee, including the Chair, at least fourteen (14) days prior to the scheduled defense date.

The Department of Forest and Natural Resources Management PhD Checklist

Step	Procedure	Responsibility	Target Date	Date Done
1.	Decide upon general area of study.	Student (in consultation with major professor)	First semester or before	__/__/__
2.	Propose steering committee (Memo through Chair of the Graduate Education Committee (CGEC) to Office of Instruction and Graduate Studies (OIGS).	Major professor (in consultation with student)	First semester	__/__/__
3.	Meet with steering committee to review progress and submit a written report to CGEC.	Student	Annually	__/__/__
4.	Meet with steering committee to discuss preliminary exam (optional).	Student	First year	__/__/__
5.	Complete preliminary exam (if required by committee).	Student	First year	__/__/__
6.	Meet with major professor and steering committee to determine appropriate coursework (Form 3B through CGEC to OIGS).	Student	First year	__/__/__
7.	Request appointment of doctoral candidacy examining committee (Form 6B through CGEC to OIGS).	Student (major professor)	At least 4 weeks before proposed exam date	__/__/__
8.	Meet with examination committee to schedule candidacy exam Form 6D to OIGS (Form 6E to OIGS).	Student (chair)		__/__/__
9.	Complete candidacy exam (Form 6F to OIGS).	Student (chair)	Minimum of 1 year before dissertation defense	__/__/__
10.	Prepare detailed proposal for dissertation research.	Student (in consultation with major professor & steering committee)		__/__/__
11.	Meet with major professor & steering committee to review research proposal. Copy final proposal to major professor, steering committee, and graduate education secretary.	Student		__/__/__
12.	Submit draft of dissertation to major professor for review, then to Steering Committee.	Student	As appropriate for projected defense date	__/__/__
13.	Request appointment of examining committee and committee chair (Form 5B through CGEC to OIGS).	Student (GEC)	At least one (1) month before proposed defense date	__/__/__
14.	Present Capstone Seminar.	Student	Before defense	__/__/__
15.	Schedule defense date with committee (including committee chair) and notify OIGS.	Student	After major professor approves draft dissertation	__/__/__
16.	Submit dissertation and abstract in final form to examining committee.	Student	Fourteen (14) days before scheduled defense date	__/__/__
17.	Defend dissertation (Form 5E OIGS).	Student (chair)	As scheduled	__/__/__
18.	Submit corrected dissertation and abstract to major Professor & defense Chair for final approval and signing.	Student	As scheduled at defense	__/__/__
19.	Submit dissertation to FNRM Chair for approval and signing.	Student	Before graduation	__/__/__
20.	Submit copies of dissertation and abstract to OIGS for signature and binding.	Student	Before graduation	__/__/__
21.	Certify completion of all requirements (Form 9, through GEC to OIGS).	Major professor	Before graduation	__/__/__