

**Graduate Student  
Handbook  
for  
The Department of Forest  
and Natural Resources  
Management**

**SUNY College of Environmental Science and Forestry  
320 Bray Hall, One Forestry Drive  
Syracuse, NY 13210  
315/470-6536**

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## I. INTRODUCTION

Welcome to the 2016-17 Academic Year! We are delighted to have you join a unique set of graduate students, faculty, and researchers who share a deep concern for the development and application of interdisciplinary approaches to the stewardship of natural resources. This is the *Graduate Student Handbook* for The Department of Forest and Natural Resources Management (FNRM). This version supersedes all previous Handbooks.

This handbook describes policies and procedures specific to FNRM graduate programs. Policies that pertain to you are set at several levels. The New York State Education Department and the State University of New York (SUNY) establish basic policies for all graduate programs. The ESF Graduate School has adopted a comprehensive set of graduate policies. These are published in the College catalog (<http://www.esf.edu/catalog/graduate.htm>). In addition, FNRM has developed specific policies, procedures, and guidelines for the effective delivery of our graduate programs. This handbook will guide you through the complexities of FNRM's graduate programs.

### ***FNRM Mission Statement***

The mission of the Department of FNRM programs is to produce and to transmit knowledge about the function and dynamics of forests and related renewable resources to all of our customers; to encourage continual learning about forest and related renewable resources and their role in making people's lives better; and to develop leaders who will manage renewable resources for people on a sustainable basis.

### ***Graduate Education Committee***

Dr. Diane M. Kuehn is Chair of the FNRM Graduate Education Committee, which administers all FNRM graduate degrees. Feel free to ask her questions that arise from your use of this handbook and throughout your graduate education. She can be reached at [dmkuehn@esf.edu](mailto:dmkuehn@esf.edu) or 315-470-6561.

### ***Email Account***

All SUNY-ESF students have an email account assigned to them by the Registrar. This is your official email address. Dr. Kuehn will only use your official SUNY-ESF email address to send you information concerning job announcements, assistantships, etc. As this is your official email account, it is your responsibility to check it at least once a week. Students that fail to do so will not receive important messages sent by the Department or the College.

We are always looking for ways to improve this handbook and our advising services. Please let us know what we can do to make your graduate program more effective for you.

Dr. Diane M. Kuehn, Chair – Graduate Education Committee  
Dr. David H. Newman, Chair – Department of Forest and Natural Resources Management

## II. PROCEDURES AND POLICIES

### **ADMISSIONS INFORMATION FOR PROSPECTIVE GRADUATE STUDENTS**

#### ***College Requirements***

For applicants whose native language is not English, ESF requires official TOEFL score to have a minimum total score of 80 and at least a score of 17 on each individual section on the internet-based exam. If the old paper-based TOEFL is used the minimum score is 550 and if the old computer-based TOEFL is used the minimum score is 213. If these minimum scores are not met, the college cannot authorize visa paperwork.

If an accepted applicant's score is less than 100 on the internet-based exam, 600 on the paper-based exam, or 250 on the computer-based exam, they will be required to take the English Language Assessment Exam (ELAE) administered by Syracuse University. Based on results of that exam, students may be directed to enroll in preparatory courses in English language usage.

#### ***FNRM Requirements***

1. Each admitted graduate student must have a major professor willing to provide mentoring through the graduate program. It is highly recommended that applicants contact and identify at least one possible major professor prior to submitting an application.
2. Recent GRE test scores (or other type of graduate record exam scores, such as the LSATs or GMATs) are required as part of a complete application. The Department of FNRM will only accept test scores for exams taken within the past five (5) years with the following provisos:
  - a. The applicant successfully completed a graduate degree within five (5) years of the date when the GRE exam was taken.
  - b. The applicant is actively pursuing and completing a graduate degree in a timely manner, thus showing success in graduate studies.

#### ***FNRM GPA and GRE Score Guidelines***

1. An academic record showing a minimum GPA of at least a B (3.0 on a scale of 4.0) average for the junior and senior year of a baccalaureate program.
2. A combined GRE score of approximately 300 (verbal plus quantitative) for master's level applicants and a combined GRE score of approximately 315 (verbal plus quantitative) for doctoral level applicants.

The GPA and GRE guidelines provided above are not requirements for admission, although high scores in these areas are associated with success in graduate school (see *Science* 2007 Vol. 315, pg 1080-81). While GRE scores and GPA are important to our evaluation of graduate applications, other factors are also fundamental to the admission decision: strong letters of reference indicating the applicant's ability to succeed in graduate school, prior

experience in the field, a well written statement of education goals, and other experiences or qualifications that may indicate potential for graduate study.

### ***Graduate Student Assistantships***

FNRM offers two (2) types of assistantships: Graduate Assistantships and Research Assistantships. Each year, FNRM awards Graduate Assistantships based on faculty recommendations. They are primarily used to assist professors teaching undergraduate courses. Each spring, students who will be returning in the fall are notified by the Chair of the Graduate Education Committee of the projected FNRM's Graduate Assistantship allocation and are formally requested to apply. Incoming students are also included in the selection pool. Application forms for Graduate Assistantships can be obtained from 320 Bray Hall. Each student must apply each year that support is desired. Graduate Assistantship assignments are decided in the spring semester for the next academic year. Students may also apply in the fall for consideration for openings in the spring. Priority is given to PhD and MS students followed by MF and MPS students.

As a research university, SUNY-ESF is involved in numerous externally funded projects, many of which support graduate students through Research Assistantships. Each project is managed by a Principal Investigator, who is responsible for selecting staff, including Research Assistants. Students interested in Research Assistantships should discuss opportunities with their major professor.

### ***Areas of Study and Guidelines for Coursework and Research***

Selection of an appropriate area of study involves thinking well beyond the Department of Forest and Natural Resources Management (FNRM) and ESF's graduation requirements. Graduate study in science should include: 1) a body of knowledge, 2) a set of methodologies for testing the theoretical framework of that knowledge, and 3) an applied understanding of how the results are important to an identified user clientele or scientific peer group.

In FNRM, we have two degree programs and seven broad areas of study or applied disciplines:

#### **Degree Program: Forest Resources Management**

##### **Areas of study:**

- **Ecology and Ecosystems**
- **Economics, Governance, and Human Dimensions**
- **Monitoring, Analysis and Modeling**
- **Natural Resources Management**
- **Sustainable Energy**

#### **Degree Program: Sustainable Construction Management & Wood Science**

##### **Areas of study:**

- **Construction Management**
- **Sustainable Construction**

Each area of study includes multiple topical and theoretical subsets for study, and can be adapted to your specific application, research, and scholarship interests. The Construction Management and Sustainable Construction study areas are not offered at the PhD level.

For MS and PhD students, research methodology includes specific techniques for gathering data, such as using mass spectrometers, growth chambers, social survey instruments and techniques, sampling or experimental designs, or parameter estimates using regression or logit models. Methodology also includes development of a broad understanding of science, its philosophical dimensions, and the common sense of purpose and values across all forms of science.

In order to solve important problems through research, students need to work with people who have already mastered the winnowing of scientific “wheat from chaff.” This is the reason that both the MS and PhD program rely heavily on apprenticeship ties to major professors, committees, and departments. It is also one reason that FNRM and ESF require seminar experience.

FNRM and ESF have a strong tradition of minimizing general requirements for graduate studies. Instead, FNRM relies on the wisdom of major professors, committee members, and individual students to guide program development and selection of courses. The following guidelines, however, provide a framework for developing strong programs. Your program of study should include two to four courses in each of three categories: theory, research methods, and important problems in forest resources management.

***Theory:***

- Broad theory appropriate to the area of study, and
- Applied theory for more specific focus

***Research methods:***

- General research methods and philosophy of science,
- Statistics, and
- Other research methods

***Important problems in forest and natural resources management:***

- Additional seminar courses, and
- Integrative courses with professional students

Students who do not have an undergraduate degree in forest or natural resources management or a closely related subject may, at the discretion of their steering committee, be required to take additional courses to fulfill prerequisites for courses. The specific courses will be selected by taking into consideration academic and career objectives in consultation with the student's major professor and steering committee.

## **INFORMATION FOR MATRICULATED GRADUATE STUDENTS**

### ***Graduate Petition Process***

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 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).

### ***Rules for Switching Degree Programs***

Rules for switching from one FNRM graduate degree program to another FNRM graduate degree program:

- a) Switching from one Master's degree program to another (MS, MPS, MF) must be done prior to the end of the 2<sup>nd</sup> semester of graduate study.
- b) PhD students may not change their program of study to MPS or MF.
- c) PhD students may switch to the MS program any time prior to candidacy exam.
- d) In unique circumstances, MS, MPS, or MF students may switch to the PhD program after successfully completing 24 credit hours of graduate course work.

### ***Cumulative GPA Requirements***

All graduate students in FNRM are required to maintain a cumulative grade point average of at least 3.00 in their graduate level courses, as per ESF college-wide requirements. Students who do not maintain this average, or who receive two or more grades of Unsatisfactory (U) for their thesis research or capstone project work, are placed on probation or can be suspended from ESF by the Associate Provost for Instruction and Dean of the Graduate School upon the recommendation of the College Subcommittee on Academic Standards (see "<http://www.esf.edu/graduate/ms.htm>" for more information).

### ***Graduate Student Fellowships, Awards, and Scholarships***

***Fellowships.*** Fellowships are awarded to students based on various competitive scenarios, usually involving an evaluation of a student's background, accomplishments, and promise for future professional and personal development.

The Farnsworth Fellowships are presented to both an MS and PhD student who demonstrate and hold promise for scholarship and service in forest and natural resources management. The FNRM Awards Committee selects the Farnsworth recipients. Students self-nominate for the Farnsworth award with letters of recommendation from selected professors. Historically, the Farnsworth Fellowships are awarded in the spring. Announcements for applications are distributed to students and faculty each year.



**Awards and Scholarships.** The **Leaf Award** is presented to a graduate student who has a record of and shows promise for research in forest and natural resources management. The FNRM Awards Committee selects Leaf recipients. Faculty (usually the major professor) nominate students for the Leaf Award. The Leaf Award is presented in the spring. Announcements for applications are distributed to faculty each year.

The **Wolf Forest Policy Scholarship** is awarded to support a student pursuing studies related to the development of U.S. forest policy on the national level; or to support U.S. forest policy development activities of FNRM. An FNRM faculty member will nominate students for this scholarship.

The **Marshall Award** is presented to a graduate student who demonstrates aptitude and achievement in scholarship or research on wilderness and protected area policy and management. The FNRM Awards Committee selects the recipients of the Marshall Award. Faculty (usually the major professor) nominate students for the Marshall Award. The Marshall Award is presented in the spring. Announcements for applications are distributed to faculty each year.

The **Curtis H. Bauer Scholarship** is presented to either an undergraduate (junior or senior) or an MPS or MF graduate student. Mr. Bauer made significant contributions to the forestry profession and forestry consulting industry in New York State. This award is for a student who demonstrates or shows interest and potential in becoming a practicing forester or consulting forester. The FNRM Awards Committee selects the recipients. Faculty (usually the major professor) nominate students for the Bauer Scholarship. Announcements for applications are distributed to faculty each year.

The **Jay and Olive Bentley Scholarship** is awarded to support graduate students in the MF and the MPS programs within FNRM. The FNRM Chair shall select recipients on the basis of financial need and academic merit.

The **Edna Bailey Sussman Fund** provides stipends to graduate students to support semester-long and summer internship experiences. Sussman fellowships support a broad range of interest areas, including forest and natural resources management. Sussman applications are treated competitively. Awards are usually in the range of \$2,500-\$3,000. Interested students should request the document “E.B. Sussman Fund: How to Apply” from the Office of Instruction and Graduate Studies (227 Bray Hall).

### ***Graduate Credit for Graduate Assistantship Courses***

Graduate Assistants (GA) assigned to assist with a course that they have not previously received graduate credit for, may, with the instructor’s approval: 1) take the course for a grade, or 2) take the course for an audit.

1. **Taking the Course for a Grade:** If a GA is to receive graduate credit for a course in which they are simultaneously working as a GA, the following two requirements must be met:

- a. The GA cannot be responsible for creating assignments (such as homework, quizzes, papers or exams), grading their own homework, quizzes, papers or exams, or maintaining the official course grade book.
  - b. To protect the student, a copy of this policy signed by the student and instructor indicating the semester and identifying the course shall be placed in the student's folder.
2. Taking the Course for an Audit: The requirements for taking a course for a grade shall not apply to a student taking a course as an audit, as an audit cannot count towards satisfying any graduation requirements.
- Instructor Discretion: Nothing in this policy shall imply that a GA has a right to take a course for a grade or an audit. Instructors have complete discretion to make these options available to GAs.

### III. THE MASTER OF FORESTRY DEGREE

The Master of Forestry (MF) graduate degree program enables students to integrate knowledge and expertise drawn from both the natural and social sciences, and to apply their knowledge to solve practical forest management problems. The primary focus of the program is to provide an opportunity for graduates coming from diverse academic backgrounds with non-forestry baccalaureates to gain a professional education in forestry. As such, the program is designed to be the first professional degree in forestry attained by a student. The program is accredited by the Society of American Foresters (SAF); the accrediting body responsible for the accreditation of postsecondary degree-granting programs in forestry and natural resources. Consequently, MF Graduates are eligible to become SAF Certified Foresters. Graduates will successfully function as professional foresters on multi-disciplinary forest management teams and respond to the challenges related to the sustainable management of local, regional and global forest 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 a degree in a related discipline (e.g., ecology, biology, wildlife, chemistry, etc.) can complete the MF degree in twelve (12) to eighteen (18) months. Students with a general science background, but little or no forestry experience, will require eighteen (18) to twenty-four (24) months to complete the program. More than four (4) semesters may be required for students from non-science backgrounds who need additional basic undergraduate coursework as part of their degree program. The MF program is designed for May admission to accommodate the 4-week summer field course.

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. 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.

#### ***Prerequisites***

Students are accepted into our graduate 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 master's degree as approved by your steering committee. A student may not transfer any graduate coursework earned as part of a conferred master's degree toward an ESF master's degree. 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 master's 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.

### ***Steering Committee***

You will have a steering committee that provides advice about your coursework and other aspects of your program. The steering committee is composed of a major professor, who is assigned to you at admission, and at least one other faculty member or other qualified person. A new major professor can be assigned by submitting a new Form 2A (available from the Office of Instruction and Graduate Studies (227 Bray Hall) and at [www.esf.edu/graduate/graddegreq.htm](http://www.esf.edu/graduate/graddegreq.htm)). Two co-major professors count as two committee members. During the first or second semester you, in consultation with your major professor, finalize your steering committee. MF students must have a minimum of a major professor and one (1) steering committee member.

To have your steering committee assigned, you must submit Form 2A: Steering Committee, obtained from the Office of Instruction and Graduate Studies (227 Bray Hall) and at [www.esf.edu/graduate/graddegreq.htm](http://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 MF degree has been designed to satisfy three (3) requirements. First, the College requires a minimum of thirty (30) graduate credit hours; thirty-seven (37) credit hours in graduate coursework are required for the MF, twenty-four (24) of which must be taken in residence at ESF (see the College Catalog available at <http://www.esf.edu/catalog>). Second, to satisfy SAF accreditation requirements, MF students must complete a set of core forestry courses designed to provide a foundation in the science of forestry and the management of forests distributed across the four SAF-defined areas of study: 1) Forest Ecology and Biology; 2) Measurement of Forest Resources; 3) Management of Forest Resources; and 4) Forest Resource Policy & Administration. Third, the Department of FNRM has established the following specific requirements:

- A three (3) credit forestry internship (FOR 898) course that is usually taken during the summer prior to the final semester of coursework. This requirement provides students with opportunities to integrate biological and management concepts within a forestry context. Students will find their own internship opportunity, in consultation with their steering committee. Appendix D includes the FNRM Internship Agreement form.

- A three (3) credit integrated resources management course (FOR 690). Students are required to demonstrate their ability to integrate biological and management concepts to solve forest management problems.
- All MF students must have a broad exposure to the skills and knowledge needed by professional foresters. Students are required to complete at least six (6) graduate credit hours in each of four (4) SAF-defined areas of study given above. This combination of courses satisfies SAF accreditation requirements and reinforces the integration of the natural and social sciences to forestry problem-solving applications.
- All MF students must meet the SUNY general education requirements listed below before earning their MF degree. We expect most incoming students will meet these requirements through their Bachelor's degree. Any deficiencies will need to be addressed during residence.

<b>SUNY/FNRM General Education Requirements</b>	<b>Credit Hours</b>
<b>Communication</b> English and Public Speaking	6
<b>Natural Science</b> Biology (w/lab)	4
<b>Mathematics</b> Precalculus or better	3
<b>Social Science</b> Economics	3
<b>History</b> American and/or Western Civ	6
<b>Total Credit Hours</b>	22

**Graduate Degree Requirements**

<b>Required Core Forestry Courses</b>	<b>Credit Hours</b>
<u>Undergraduate Required Core</u>	
FOR 304 Adirondack Field Studies	4
ESF 300 Introduction to Geospatial Information Technologies	3
EFB 336 Dendrology	3
<u>Graduate Required Core</u>	
FOR 522 Forest Mensuration	3
FOR 524 Forest Biometrics	3
FOR 532 Forest Ecology	3
FOR 533 Managerial Economics for Environmental Professionals	3
FOR 534 Silvicultural Practice	4
FOR 545 Introduction to Soils	3
FOR 570 Forest Management Decision Making and Planning	3
FOR 573 Forest Operations	3
FOR 665 Natural Resources Policy	3
FOR 689 Natural Resources Law and Policy	3
FOR 898 Professional Experience/Internship	3
FOR 690 Integrated Resources Management	3
<b>Total Graduate Credit Hours</b>	<b>37</b>

The undergraduate core includes an off-campus, 4-week summer field course, Adirondack Field Studies, giving students the required field skills prior to their fall semester. The graduate required core courses satisfy, 1) the graduate level courses required in each of the four SAF-defined areas of study, and 2) count towards the College requirement of a minimum of 30 graduate credits. FOR 532 Forest Ecology, FOR534 Silvicultural Practice and FOR545 Introduction to Soils satisfy the Forest Ecology and Biology requirement. FOR522 Forest Mensuration and FOR523 Forest Biometrics satisfy the Measurement of Forest Resources requirement. FOR533 Managerial Economics for Environmental

Professionals, FOR570 Forest Management Decision Making and Planning and FOR573 Forest Operations satisfy the Management of Forest Resources requirement. FOR665 Natural Resources Policy and FOR688 Natural Resources Agencies and Administration satisfy the Forest Resource Policy and Administration requirement. You may petition to have specific core forestry courses waived based on your academic background. The FNRM Graduate Education Committee reviews petitions on an individual basis.

### ***Student Program of Study***

After forming your steering committee, you must fill out Form 3B: Graduate Student Program (available from the Office of Instruction and Graduate Studies (227 Bray Hall) and at [www.esf.edu/graduate/graddegreq.htm](http://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 in 320 Bray Hall records the form and forwards it to the Office of Instruction and Graduate Studies 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. 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.

**Department of Forest and Natural Resources Management MF Checklist**

<b>Step</b>	<b>Procedure</b>	<b>Responsibility</b>	<b>Target date</b>	<b>Date done</b>
1.	Propose steering committee (Memo by Chair of the Graduate Education Committee (CGEC) to Office of Instruction and Graduate Studies (OIGS)).	Major Professor (in consultation with student)	Second semester	__/__/__
2.	Student meets with steering committee to determine appropriate coursework. Student completes Form 3B. Student, major professor, and steering committee sign form (which must be approved by CGEC and OIGS).	Student	Second semester	__/__/__
3.	Student meets with steering committee to review study plan (and if necessary, revise Form 3B).	Student	Second semester	__/__/__
4.	Certify completion of all requirements (Form 9), through CGEC to OIGS.	Major Professor	Before graduation	__/__/__

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## IV. THE MASTER OF PROFESSIONAL STUDIES DEGREE

The Master of Professional Studies (MPS) graduate degree program enables students to integrate knowledge and expertise drawn from both the natural and social sciences, and to apply their knowledge to solve practical forest and natural resources management problems. The primary focus of the program is to provide an opportunity for graduates coming from related academic backgrounds with baccalaureates to gain a professional education in forest and natural resources management. As such, the program is designed to be the first professional degree in forest and natural resources management. Graduates will successfully function as professional managers on multi-disciplinary forest and natural resources management teams 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 a degree in a related discipline (e.g., ecology, biology, wildlife, chemistry, etc.) can complete the MPS degree in twelve (12) to eighteen (18) months. Students without a general science background will require eighteen (18) to twenty-four (24) months to complete the program. The program is designed for fall admission, but spring semester admission is possible. More than four (4) semesters may be required for students from non-science backgrounds who need additional basic undergraduate coursework as part of their program of study.

The Department of Forest and Natural Resources Management (FNRM) uses a checklist to facilitate detailed program planning and to document 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.

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, the 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 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 master's degree as approved by your steering committee. A student may not transfer any graduate coursework earned as part of a conferred master's degree toward an ESF master's degree. 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 master's 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.

### ***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 a major professor, who is assigned to you at admission, and at least one other faculty member or other qualified person. A new major professor can be assigned by submitting a new Form 2A (available from the Office of Instruction and Graduate Studies (227 Bray Hall) and at [www.esf.edu/graduate/graddegreq.htm](http://www.esf.edu/graduate/graddegreq.htm)). Two co-major professors count as two committee members. During the first or second semester you, in consultation with your major professor, finalize your steering committee.

To have your steering committee assigned, you must submit Form 2A: Steering Committee, obtained from the Office of Instruction and Graduate Studies (227 Bray Hall) and at [www.esf.edu/graduate/graddegreq.htm](http://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 MPS degree requires a minimum of thirty (30) total graduate credit hours, of which at least twenty-four (24) credit hours must be taken in residence at ESF. These general graduate requirements are set by the College (see the College Catalog available at <http://www.esf.edu/catalog>). In addition to the general graduate requirements, FNRM has established the following faculty specific requirements:

<b>Requirements/Courses for Forest Resources Management Degrees</b>	<b>Credit Hours</b>
A. A graduate level course in statistics	3
B. FOR560 Principles of Management (or equivalent; if waived, add 3 hours to E or F) <sup>1</sup>	3
C. FOR692 Capstone in Forest and Natural Resources Management	3
D. Graduate course in environmental or scientific writing, or demonstration of ability (if waived, add 3 hours to E or F) <sup>2</sup>	3
E. At least 15 graduate credit hours in student's area of study	15
F. At least 3 graduate credit hours in quantitative methods or geographic information systems	3
<b>Total Credit Hours<sup>3</sup></b>	<b>30</b>

<sup>1</sup> This requirement may be waived under the following conditions: 1) a B or better in a junior/senior level principles of management course from an accredited institution, or a BS in a management-related field; 2) a memo attached to the 3B form and the MPS course list signed by student and steering committee approving the waiver.

<sup>2</sup> This requirement may be waived under the following conditions: 1) a portfolio of written work will be submitted to be reviewed by the steering committee; 2) a memo attached to the 3B form and the MPS course list signed by student and steering committee stating they have reviewed the portfolio and approve the waiver.

<sup>3</sup> No more than three (3) credits of a professional experience or internship (FOR898) may be used towards the thirty (30) credits. Professional experience or internship (FOR898) will be listed as part of the student's area of concentration.

<b>Requirements/Courses for Construction Management Degree</b>	<b>Credit Hours</b>
A. CME 543 Construction Estimating	3
B. CME 653 Construction Planning and Scheduling	3
C. CME 654 Construction Project Management	3
D. CME 658 Construction Contracts and Specifications	3
E. Directed elective courses <sup>1</sup>	6 - 12
F. Open elective courses <sup>2</sup>	3 - 9
G. CME 898 Professional Experience/Synthesis	3 - 6
<b>Total Credit Hours</b>	<b>30</b>

<sup>1</sup> See the ESF catalog online for the list of courses.

<sup>2</sup> Must be chosen from a list of acceptable courses. See the ESF catalog online for this list.

<b>Requirements/Courses for Sustainable Construction Degree</b>	<b>Credit Hours</b>
A. Core courses <sup>1</sup>	12
B. Construction management courses <sup>1</sup>	6 - 12
C. Application elective courses <sup>2</sup>	3 - 9
D. CME 898 Professional Experience/Synthesis	3 - 6
<b>Total Credit Hours</b>	<b>30</b>

<sup>1</sup> See the ESF catalog online for the list of courses.

<sup>2</sup> Must be chosen from a list of acceptable courses. See the ESF catalog online for this list.

No course may be used to satisfy more than one requirement. Credit may be given for graduate course work successfully completed before entry into the MPS program, but the total requirement is thirty (30) graduate credit hours with at least twenty-four (24) taken in residence at ESF. See the Transfer Credit section above.

***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 (227 Bray Hall) and at [www.esf.edu/graduate/graddegreq.htm](http://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 in 320 Bray Hall records the form and forwards it to the Office of Instruction and Graduate Studies 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. 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.

Additionally, you must complete the FNRM “MPS Course List” (see Appendix B) and submit it with your Form 3B. The “MPS Course List” should contain all courses listed on the Form 3B and demonstrate how these courses fulfill the MPS requirements. This list is used to verify that students have chosen courses that meet MPS degree requirements.

**Department of Forest and Natural Resources Management MPS Checklist**

<b>Step</b>	<b>Procedure</b>	<b>Responsibility</b>	<b>Target date</b>	<b>Date done</b>
1.	Decide upon general area of study	Student (In consultation with Major Professor )	First semester or before	__/__/__
2.	Propose steering committee (Memo by Chair of the Graduate Education Committee (CGEC) to Office of Instruction and Graduate Studies (OIGS)).	Major Professor (in consultation with student)	Second semester	__/__/__
3.	Student and steering committee determine appropriate coursework. Student completes Form 3B and “MPS Course List” form. Student, major professor, and steering committee sign form (which must be approved by CGEC and OIGS).	Student	Second semester	__/__/__
4.	Meet with steering committee to review study plan (and if necessary, revise Form 3B).	Student	Second semester	__/__/__
5.	Certify completion of all requirements (Form 9, through CGEC to OIGS)	Major Professor	Before graduation	__/__/__

## V. THE MASTER OF SCIENCE DEGREE

The Master of Science (MS) graduate degree program enables students to integrate knowledge and expertise drawn from both the natural and social sciences, and to research issues and apply their knowledge to solve practical problems in forest and natural resources management situations. The primary focus of the program is to provide an opportunity for graduates coming from related, and in some circumstances unrelated, academic backgrounds with baccalaureates to gain a science-based education in forest and natural resources management as well as sustainable energy. Graduates will successfully function as researchers and managers on multi-disciplinary management teams 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 a degree in a related discipline (e.g., ecology, biology, wildlife, chemistry, etc.) can complete the MS degree in twenty-four (24) to thirty (30) months. Students without a general science background will require more than thirty (30) months to complete the program. More than four (4) semesters of coursework may be required for students from non-science backgrounds who need additional basic undergraduate coursework as part of their program of study.

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.

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 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 master's degree as approved by your steering committee. A student may not transfer any graduate coursework earned as part of a conferred

master's degree toward an ESF master's degree. 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 master's 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.

### ***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 can be assigned by submitting Form 2A (available from the ESF Office of Instruction and Graduate Studies (227 Bray Hall) and at [www.esf.edu/graduate/graddegreq.htm](http://www.esf.edu/graduate/graddegreq.htm)). Two co-major professors count as two committee members. You, in consultation with your major professor, choose who will be on your steering committee.

To have your steering committee assigned, you must submit Form 2A Steering Committee (available the ESF Office of Instruction and Graduate Studies (227 Bray Hall) and at [www.esf.edu/graduate/graddegreq.htm](http://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 MS degree requires a minimum of thirty (30) total graduate credit hours. A total of twenty-four (24) hours in graduate coursework are required, of which at least eighteen (18) credit hours must be taken in residence at ESF. MS students must complete at least six (6) credit hours of thesis research credit (FOR 899: Masters Thesis). These general graduate requirements are set by the College (see the College Catalog, available at [www.esf.edu/catalog](http://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 the general graduate requirements, FNRM has established the following specific requirements:

### ***Seminars***

All MS students must take two (2) topical seminars.

### ***Capstone***

All MS students must present a capstone seminar on their thesis work. 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 FNRM Secretary (Ms. Debra Sovocool, 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. Sovocool will produce a flyer and have copies posted around campus. A student presentation of the thesis work in a FOR 797 course may be used as the capstone seminar if the presentation is advertised as such and all other conditions for scheduling a capstone listed above are followed.

### ***600-level and Resident Courses***

As noted above, MS students must complete at least thirty (30) graduate credits (twenty-four (24) coursework credits and six (6) thesis research credits). Twelve (12) coursework credit hours must be at the 600-level or above. No more than two (2) credits of seminar can be counted as part of the twelve (12) 600-level or above coursework requirement.

### ***Student Program of Study***

After forming your steering committee, you must fill out Form 3B: Graduate Student Program (available from the Office of Instruction and Graduate Studies (227 Bray Hall) and at [www.esf.edu/graduate/graddegreq.htm](http://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 in 320 Bray Hall records the form and forwards it to the Office of Instruction and Graduate Studies 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. 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.

### ***Thesis Proposal***

Before your research is very far underway, you must write a study proposal that documents your plan for dissertation work. 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 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. The proposal should be given to your major professor and each member of your steering committee. Approval of the proposal by the committee is documented with Form 3B.



## ***Thesis***

A focal point of MS graduate study is the thesis. A thesis is a document that clearly demonstrates your graduate level accomplishments. It details the results of your scholarly endeavor and is the subject of the thesis defense. The MS thesis should demonstrate that the student has: 1) a core understanding of the state of knowledge in the field of study, and 2) working knowledge of the scientific method.

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

## ***Thesis Defense Examination***

The thesis defense examination is conducted by your steering committee and one or more additional examiners, for a minimum total examining committee of four (4) persons. In addition, the Dean of Instruction and Graduate Studies 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 Office of Instruction and Graduate Studies (OIGS) (227 Bray Hall) and at [www.esf.edu/graduate/defense.htm](http://www.esf.edu/graduate/defense.htm)) to appoint a thesis examination committee. When 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.

**Department of Forest and Natural Resources Management MS 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 by Chair of the Graduate Education Committee (CGEC) to Office of Instruction and Graduate Studies (OIGS).	Major professor (in consultation with student)	Second/Third semester	__/__/__
3.	Student and steering committee determine appropriate coursework. Student completes Form 3B. Student, major professor, and steering committee sign form (which must be approved by CGEC and OIGS).	Student	Second/Third semester	__/__/__
4.	Meet with steering committee to review study plan (and if necessary, revise Form 3B).	Student	Second/Third Semester	__/__/__
5.	Submit thesis to major professor for review	Student	Beginning of final semester	__/__/__
6.	Request appointment of defense committee and committee chair (Form 5B) through CGEC to OIGS)	Student (major professor)	At one (1) month before proposed defense date	__/__/__
7.	Schedule defense date with committee (including committee chair) and notify OIGS	Student	After Major Professor approves draft thesis	__/__/__
8.	Present Capstone Seminar	Student	Prior to defense	__/__/__
9.	Submit thesis and abstract in final form to defense committee	Student	Fourteen (14) days before scheduled defense date	__/__/__
10.	Defend thesis (Form 5-E to OIGS)	Student (committee chair)	As scheduled	__/__/__
11.	Submit corrected thesis and abstract to major professor and defense chairman for final approval and signing	Student	As scheduled at defense	__/__/__
12.	Submit thesis to FNRM Chair for approval and signing	Student	Before graduation	__/__/__
13.	Submit copies of thesis to OIGS for signatures and binding	Student	Before graduation	__/__/__
14.	Certify completion of all requirements (Form 9, through CGEC to OIGS)	Major Prof.	Before graduation	__/__/__

## VI. 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 as well as sustainable energy. 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 applicants with some prior background in forestry and natural resources as well as those who possess some general science knowledge. 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 or energy experience, may 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. 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***

FNRM will not accept PhD students who do not have at least one graduate degree. 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 can be assigned by submitting Form 2A (available from the ESF Office of Instruction and Graduate Studies (OIGS) (227 Bray Hall) and at [www.esf.edu/graduate/graddegreq.htm](http://www.esf.edu/graduate/graddegreq.htm)). Two co-major professors count as two committee members. During the second or third semester you, in consultation with your major professor, choose who will be on your steering committee.

To have your steering committee assigned, you must submit Form 2A Steering Committee (available from OIGS (227 Bray Hall) and at [www.esf.edu/graduate/graddegreq.htm](http://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 are set by the College (see the College Catalog, available at [www.esf.edu/catalog](http://www.esf.edu/catalog)). Students develop programs of study to satisfy their coursework requirement in consultation with their major professor and steering committee.

In addition to the general graduate requirements, FNRM has established the following specific requirements:

#### ***Seminars***

All PhD students must take at least two (2) topical seminars.

### **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 defense examination committee members. This information must be given to the FNRM Secretary (Ms. Debra Sovocool, 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. Debra Sovocool 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.

### **Student Program of Study**

After forming your steering committee, you must fill out Form 3B: Graduate Student Program (available from the Office of Instruction and Graduate Studies (227 Bray Hall) and at [www.esf.edu/graduate/graddegreq.htm](http://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 in 320 Bray Hall records the form and forwards it to the Office of Instruction and Graduate Studies 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. 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.

### **Preliminary Examination**

This examination assesses the student's 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. 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 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. The proposal should be given to your major professor and each member of your steering committee. Approval of the proposal by the committee is documented with Form 3B.

### ***Doctoral Candidacy Examination***

After completion of the majority of graduate coursework, PhD students take a candidacy examination. The objectives of this examination are to determine the breadth and depth of knowledge in the chosen field of study and to 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.

**Examination Committee Members:** The doctoral candidacy examination committee is made of a minimum of four (4) members. In addition to your steering committee members, at least one (1) additional faculty member or other qualified person must be added to the committee for the candidacy examination. Once your examination committee has been determined, you must formally schedule your doctoral candidacy examination.

To schedule a doctoral candidacy examination, 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 (available at <http://www.esf.edu/graduate/docexam.htm>) should be submitted according to the academic year deadlines for defense exams.

Then, 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 (Form 6C). The role of the committee chair is to manage the examination, ensure its integrity and represent the interests of the faculty and student.

2. When you receive a copy of Form 6C, which officially appoints your examination committee, from the Office of Instruction and Graduate Studies (OIGS), 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 OIGS of the agreed upon date, time, and location for your planning meeting at least two weeks in advance of the date. OIGS 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.

**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:

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. If you are using Form 1, you and your major professor should arrange for a time and location to administer the questions.

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 dissertation 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.

**Oral Examination:** The final step is to meet with your committee and complete the oral examination at the designated date. Any member of the faculty may be an observer. You may invite a silent student observer to attend the oral examination. 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 successful 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](http://www.esf.edu/graduate/thesisdiss.htm). Directions for preparation of a manuscript style dissertation are available in Appendix C. 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 or 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 an examining committee of four (4) or 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](http://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 dissertation 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***

<b>Step</b>	<b>Procedure</b>	<b>Responsibility</b>	<b>Target Date</b>	<b>Date Done</b>
1.	Decide upon general area of study.	Student (in consultation with major professor)	First/Second semester	__/__/__
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)	Second/Third 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	Second 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 defense Chair (Form 5B through CGEC to OIGS).	Student (CGEC)	At least one (1) month before proposed defense date	__/__/__
14.	Present Capstone Seminar.	Student	Before defense	__/__/__
15.	Schedule defense date with committee (including defense 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 CGEC to OIGS).	Major professor	Before graduation	__/__/__

## VII. EXPECTATIONS AND RESPONSIBILITIES FOR FNRM MAJOR PROFESSORS AND GRADUATE STUDENTS

### ***Commitments and Responsibilities of the Graduate Student***

1. Graduate Student will maintain a high quality of work in the classroom, the laboratory, and in the field by maintaining a high level of professionalism, self-motivation, engagement, scientific curiosity, and ethical standards.
2. Graduate student shall work with their major professor to select steering committee members.
3. Graduate student shall stay in contact with their major professor and steering committee members, providing updates on their progress at least once each semester.
4. Graduate student has the right to change their major professor if they can demonstrate a reasonable justification for doing so, such as making changes in educational or career direction, or finding that their major professor is consistently unable or unwilling to abide by the responsibilities and obligations noted herein. Students who choose to pursue a change in their major professor are responsible for identifying a new faculty member willing to serve in this role. If a new major professor cannot be found, a student may be administratively withdrawn from their program of study.
5. Graduate student shall work with their major professor and steering committee members to propose, plan, and implement their capstone, thesis, or dissertation project.
6. Student is responsible for working with their steering committee to establish the “plan of study” (Form 3B) identifying all coursework, skills, and tool requirements to be met prior to conferral of their degree.
7. Graduate student shall comply with both the letter and spirit of all program, department, Graduate School, and ESF institutional policies, including all safety, animal use, and human subject research policies.
8. Graduate student shall provide accurate and honest reporting of research results, and they shall stringently uphold ethical norms in research methodology and scholarship.
9. Graduate student holding an assistantship is responsible for understanding and discussing the details of their appointments with their faculty supervisors including institutional policies on work hours, leaves, etc., and the specific demands and duties of their individual appointment.
10. Graduate student shall discuss college, faculty, and departmental policies and practices concerning data ownership and confidentiality, intellectual property, authorship, and attendance/representation at professional meetings with their major professor.
11. Graduate student shall maintain a detailed, organized, and accurate record of their research as directed by their major professor. Research data and equipment/software

purchased through research grants are the property of SUNY ESF and/or the SUNY Research Foundation per the ESF Office of Research Programs (Data Ownership Policies: [www.esf.edu/research/resources/orp\\_policy\\_10\\_data\\_ownership.doc](http://www.esf.edu/research/resources/orp_policy_10_data_ownership.doc) ).

12. Graduate student with space in labs, offices, and field stations, shall share responsibilities for maintaining a clean and safe workplace. Students shall be respectful of all student colleagues and college personnel.

### ***Commitments and Responsibilities of the Major Professor***

1. As role a model, the major professor shall maintain the highest standards of professionalism, ethical conduct, and collegiality, respecting and embracing the contributions of students, staff, and faculty colleagues.
2. Major professor shall strive to nurture the intellectual and professional development of the graduate student by fostering academic excellence, exemplary professionalism, cultural sensitivity, and a commitment to life-long learning.
3. Major professor shall aim to provide an environment that is intellectually stimulating, emotionally supportive, safe, and free of harassment and discrimination.
4. Major professor shall respect and encourage the chosen career path of the graduate student, including their choice of mentors.
5. Major professor may withdraw as major professor only when a student has consistently demonstrated an inability or unwillingness to abide by the responsibilities and obligations noted herein.
6. Major professor shall do their utmost to provide regular, timely, and constructive feedback to the graduate student under their mentorship. Major professor shall also be responsive to their student's queries to meet, critique their work, or answer questions.
7. Major professor shall be knowledgeable about, and guide the graduate student through the requirements and deadlines of their graduate programs as well as those of the Graduate School.
8. Major professor shall, when possible, encourage and provide the graduate student with opportunities for teaching and research, as appropriate to the student's discipline and desired career path.
9. Major professor shall encourage the graduate student's participation in conferences, seminars, and other extra-curricular learning experiences.
10. Major professor shall recognize and respect the financial vulnerability of the graduate student; they shall not take advantage of this vulnerability to promote their own research and scholarship agendas, nor shall they obstruct or delay the academic progress of a student to maintain an employment relationship not serving the best interests of the student.
11. Major professor shall discuss authorship policies with their graduate student and acknowledge their intellectual contributions to research projects and publications.

## VIII. CONCURRENT DEGREES WITH SYRACUSE UNIVERSITY

The Department of Forest and Natural Resources Management works with the Office of Instruction and Graduate Studies to also offer the following concurrent degrees with Syracuse University:

- Master of Public Administration in the Maxwell School of Citizenship and Public Affairs
- Master of Business Administration in the Martin J. Whitman School of Management
- Master of Arts or Master of Science in the S.I. Newhouse School of Public Communications
- Master of Science in the School of Education

### ***General Information***

To be eligible for admission to the concurrent degree programs, matriculated students must complete at least one full-time semester of graduate-level coursework or the equivalent, and earn a 3.5 grade point average or better at ESF. Students who are interested in any of these programs must complete an application process through the ESF Office of Instruction and Graduate Studies within their first year of study.

### ***Master of Public Administration in the Maxwell School of Citizenship and Public Affairs***

The Master of Public Administration (MPA) is a one (1) year program that is designed to prepare students for the challenges of leadership and management in the public sector. Maxwell is the only major school where the professional graduate program in public administration is integrated within the larger school of social sciences (anthropology, economics, geography, history, political science and sociology). This strong tradition of interdisciplinary research and study provides a rich context for the professional study of public policy analysis and management.

General information about the Maxwell School of Citizenship and Public Affairs can be found at: <http://www.maxwell.syr.edu/>. Specific information about the MPA degree program can be found at: [http://www.maxwell.syr.edu/paia/degrees/PAIA\\_Degree\\_Programs/](http://www.maxwell.syr.edu/paia/degrees/PAIA_Degree_Programs/).

Contact Faculty Member  
Robert W. Malmshemer, Professor  
Forest and Natural Resources Policy and Law  
305 Bray Hall, 315-470-6909, [rwmalmsh@esf.edu](mailto:rwmalmsh@esf.edu)

### ***Master of Business Administration in the Martin J. Whitman School of Management***

The Master of Business Administration (MBA) is a two (2) year program that provides a well-rounded education incorporating both the theoretical background and practical experience needed to succeed in today's global economy. The MBA program challenges

students by encouraging entrepreneurial thinking through specialized courses and practical experience working with local entrepreneurs.

General information about the Martin J. Whitman School of Management can be found at: <http://whitman.syr.edu/>. Specific information on the MBA program can be found at: <http://whitman.syr.edu/MBA/>.

### ***Master of Arts or Master of Science in the S.I. Newhouse School of Public Communications***

Newhouse School of Public Communications offers eleven (11) professional master's degree programs covering the full gamut of mass communications: advertising; arts journalism; broadcast journalism; documentary film and history; magazine, newspaper, and online journalism; media management; new media; photography; public diplomacy; public relations; and television, radio, and film. Students will be exposed to intense classroom study, field experience, and hands-on, real-world project development.

Specific information on the various master's degree programs can be found at: <http://newhouse.syr.edu/admissions/graduate/masters-programs>

### ***Master of Science in the School of Education***

Students will study with a faculty whose members are celebrated for their contributions to educational research and theory, their dedication to community service, and their extraordinary teaching abilities. You will be engaged in a program that encompasses the most effective traditional approaches while challenging the wisdom of conventional practices; assured opportunities for research, clinical practice, and internships designed to clarify relationships of theory and practice; and assured the assistance of a mentoring faculty to help you get the most out of all these experiences.

Specific information about the Master of Science degree can be found at: [http://soe.syr.edu/future/degree\\_programs/masters\\_degrees.aspx](http://soe.syr.edu/future/degree_programs/masters_degrees.aspx)

Contact Faculty Member for Business, Communications & Education  
Diane M. Kuehn, Associate Professor  
310A Bray Hall  
Syracuse, NY 13210  
phone: (315) 470-6561

## IX. RESOURCES

### ***FNRM Offices: 320 Bray Hall***

Dr. David H. Newman is the Chair of the Department of Forest and Natural Resources Management (FNRM). His office is located in 320 Bray Hall. His phone number is 315-470-6534 and his email address is [dnewman@esf.edu](mailto:dnewman@esf.edu).

Dr. Diane M. Kuehn is Coordinator of FNRM Graduate Education Committee, which administers the MF, MPS, MS and PhD degrees. Her office is located in 310A Bray Hall. Her phone number is 315-470-6561 and her email address is [dmkuehn@esf.edu](mailto:dmkuehn@esf.edu). Feel free to contact Drs. Kuehn and Newman regarding any questions, comments, or concerns about FNRM graduate programs.

The Graduate Secretary is in 320 Bray Hall and can be contacted at 315-470-6675. The Graduate Secretary is the record keeper for the graduate program, and should be informed if there are changes to your local address, phone number, etc. In addition, the Graduate Secretary monitors the status of various aspects of your program on a database. It is important to keep this office informed of all changes, additions, or deletions of information in your program.

### ***Mailboxes***

You will be assigned a mailbox for your incoming college-related mail in 303 Bray Hall. Please have this mail addressed to 320 Bray Hall, 1 Forestry Drive, Syracuse, NY, 13210.

### ***Office Space***

It has been the general practice of SUNY-ESF that graduate students are provided with desk space as needed. The process of securing desk/office space is facilitated by your major professor and the Department Secretary, Ms. Debra Sovocool.

### ***Keys***

Keys for office/desk space and related building access may be obtained by formal request to Ms. Debra Sovocool (320 Bray Hall). She will fill out cards and have them signed by FNRM's Chair (Dr. David Newman). The "Key Procedure" can be located on the ESF Website: <http://www.esf.edu/au/documents/KeyProcedures.pdf>.

### ***Computer Access***

SUNY-ESF, like most research and teaching institutions, is increasingly reliant on e-mail. All SUNY-ESF students have an email account assigned to them by the Registrar. This is your official email address. You should make sure that all members of your committee have your official email address and you have theirs. You are responsible for regularly checking your official email address for messages. Students that fail to do so will not receive important broadcast messages sent by faculty or the college.

Syracuse University has various computer facilities available for student use. Computer clusters at Syracuse University are described on their web site (<http://cms.syr.edu/labs>). At SUNY-ESF, computers are available in the Academic Computer Center in Baker Laboratory. In addition, FNRM maintains a computer cluster in 416 Bray. These computers are for use only by graduate student within FNRM. The entire campus is wired for Internet access. Networking is generally available in the various office rooms for Internet access.

### ***Equipment***

Students can borrow forestry and mensuration equipment to support class exercises and research. The equipment available includes a wide range of field gear, from wedge prisms to 100-ft tapes. Loans of equipment should be arranged through your major professor.

### ***Conference Rooms: 314 and 324 Bray Hall***

Conference rooms in 314 and 324 Bray Hall can provide settings for meetings and seminars, including graduate student capstone seminars. You may reserve a conference room for a seminar by contacting Ms. Sovocool in 320 Bray Hall. The rooms may also be scheduled for student meetings (e.g. your steering committee meeting). During unscheduled periods these conference rooms are available for informal discussions and study.

### ***College Properties***

SUNY-ESF has four forested properties available for demonstration and research: the Svend O. Heiberg Memorial Forest, about 25 miles south of the main campus, and three properties in the Adirondacks: the James F. Dubuar Memorial Forest, the Archer and Anna Huntington Wildlife Forest, and the Charles Lathrop Pack Demonstration Forest. These properties are available for field studies. Consult with your major professor for possible opportunities associated with the properties.

## Appendix A: Petitions

### **Background**

The petition process exists to provide needed flexibility in a graduate degree program. Students often encounter situations that require minor adjustments from the academic requirements. As such, petitions at ESF generally handle two basic kinds of actions: 1) variances to degree requirements and 2) transfer of credit from another institution after the admissions process is completed. Petition forms are available from the Registrar's Office. Before completing a petition form, meet with your major professor. Many simple problems can be solved with a memo from your major professor to the Graduate Education Committee.

### **Completing Petition Forms**

Complete the petition forms legibly and clearly explain your request. There are four parts of the petition form that must be completed:

**1. Informational Heading.** Be sure to complete the contact numbers and sign at the appropriate place (because of the layout, this is often omitted).

**2. Request.** This should be clear and concise. What is the variance being requested? What specific course (from what institution) is being transferred?

- Requests to substitute courses require the consent of the instructor.
- Often, the best way to fill out a petition is to write a simple memorandum and attach it to the petition form.

**3. Justification.** This should be clear, logical, and detailed. You want to include a reasoned justification for the request. Clarity is important, but more detail is better than less. It is important to remember that those acting on the petition will only see what you have written as a justification for your request. If the request is a variance, what are the circumstances? If a course transfer, what requirement do you want the course to fulfill? Depending upon what is being petitioned, you will want to include additional information here:

- Variances. You should obtain any additional items that may be helpful - letters of support or explanation from relatives, doctors, instructors, etc. - and attach them to the petition before the major professor signs the petition.
- Course transfers. You must attach a description of the course, obtained from a catalog, or the World Wide Web.

**4. Signatures.** Graduate petitions must be signed by your major professor and then brought to the Graduate Education Secretary in 320 Bray Hall. The Graduate Education Committee acts on petitions. If approved, the Chair of the Graduate Education Committee Chair (not the FNRM Chair) will sign the petition and forward it to the Dean of Instruction and Graduate Study for final approval. The Dean may choose to consult with the Committee on Instruction (Academic Standards Subcommittee) before acting. If approved, the petition is forwarded to the Registrar, who makes the appropriate change in the record.



## Appendix B: MPS Course List

Student \_\_\_\_\_ Date \_\_\_\_\_

Requirements/Courses <sup>1</sup>	Credits
A. A graduate level course in statistics _____	_____
B. FOR560 Principles of Management (or equivalent; if waived, add 3 hours to E or F) _____	_____
C. FOR692 Capstone in Forest and Natural Resources Management _____	_____
D. Graduate course in environmental or scientific writing, or demonstration of ability (If waived, add 3 hours to E or F) _____	_____
E. At least 15 graduate credit hours in student's area of concentration <sup>2</sup> 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____	_____ _____ _____ _____ _____ _____ _____
F. At least 3 graduate credit hours in quantitative methods, geographic information systems 1. _____ 2. _____	_____ _____
<b>Total (must be at least 30)</b>	_____

<sup>1</sup> No course may be used to satisfy more than one requirement.

<sup>2</sup> No more than three (3) credits of a professional experience or internship (FOR898) may be used towards the thirty (30) credits.

## **Appendix C. Description of Manuscript Option for Writing MS Thesis and PhD Dissertation.**

As an alternative to the traditional thesis, the Department of Forest and Natural Resources Management (FNRM) accepts manuscript-oriented submissions to fulfill, in part, the requirements of the MS and PhD degrees. The manuscript format is intended to facilitate the dissemination of graduate research findings in peer-reviewed journals. The manuscript format may be advantageous to graduates who will be evaluated based upon their publication record.

The difference between the two options is one of organization and structure; the same high standards of quality, innovation and comprehensiveness are expected. The writing is expected to be more concise than in a traditional thesis or dissertation and the chapters intended for publication will omit extraneous material. Additional chapters or appendices should include material important to the larger body of work but not contained in the individual manuscripts. One (1) to two (2) manuscripts are expected for the MS thesis and two (2) to four (4) manuscripts are expected for the PhD dissertation. Students are advised to discuss this option with their major professor and their steering committee before committing to this format. This option is not necessarily appropriate for all areas of study within FNRM.

FNRM makes the following specifications for students choosing the manuscript format.

### ***The Manuscripts***

Manuscripts must be written solely by the student. Although the manuscripts ultimately may be co-authored with other faculty or students, the graduate student is required to prepare a new and original manuscript for submission. As with all technical writing, the work will be judged on: 1) the importance of the contribution to the student's research field, 2) the technical soundness of the paper(s), and 3) the organization and style.

The manuscripts need not be submitted to a journal prior to the defense, but must be in a format that would make them acceptable to a journal editor. The student may initiate the submission process following the successful completion of each manuscript or following the successful defense.

The student must select a journal (a leading peer-reviewed journal in their field) and prepare the manuscripts following the guidelines set forth in that journal. The organization of most manuscripts will conform to the standard scientific style: introduction, methods, results and discussion; other styles may be appropriate in some disciplines. The introduction of each manuscript should identify the important question or issue that is the focus of the research in terms that can be easily understood by a general reader, especially in cases where the subject of the manuscript is highly technical and likely to be understood in detail only by specialists. Likewise, the discussion section of each manuscript should describe the inferences deriving from the work in terms that make their importance clear to the general reader.

Each manuscript within a thesis or dissertation must stand on its own as a significant individual contribution. Unlike the traditional thesis or dissertation, lengthy literature review

sections are rarely appropriate. If the subject area of the manuscript has been reviewed recently, citation of said review(s) can replace an exhaustive review of the primary literature. In cases where a detailed literature review is necessary, this may be done in the Introduction section of the thesis or dissertation, as described below.

### ***The Thesis or Dissertation Introduction and Summary Sections***

The manuscripts must be introduced and concluded with Introduction and Summary sections. These sections are critical to the synthesis of ideas presented in the manuscripts; they transform a set of manuscripts into a comprehensive body of original work deserving of a graduate degree. Therefore, substantial care and thought must go into the Introduction and Summary sections.

The Introduction must place the full body of work in some historical context and adequately set the larger research issues. It must then provide a rationale for the reader to follow the links between the separate manuscripts. In many instances, the Introduction section may provide a more substantive literature review than the individual manuscripts. The Summary must provide a synthesis of the research findings and draw conclusions beyond the scope of the individual manuscripts. The manuscripts must all be related. While they may report on different and separate studies, the Introduction and Summary must show that the works are integrated and related at a fundamental scientific level.

## Appendix D: Professional Experience/Internship Guidelines

These are general guidelines to be followed by any student undertaking an internship for academic credit. These general guidelines can be supplemented or amended by the particular major professor and student depending on special circumstances.

1. Students must complete, in consultation with the major professor and field internship supervisor, a FNRM Internship Agreement (see below).
2. Students must maintain periodic contact (every two weeks) with their major professor during the internship. This can either be by phone, email, or regular mail.
3. Students must keep a daily journal to document observations, progress and concerns. This will include activities in which they participated, meetings attended, and observations about the organization they worked for.
4. Students must keep a record of all projects for which they have responsibility. This record consists of copies of written reports, display material, data analyses, etc.
5. At the completion of the internship, the student will prepare a written report that will address the following:
  - a. What organization did the student work for and what does that organization do?
  - b. What is the structure of the organization and what part of the organization did the student work for?
  - c. What did the student do during the internship? What were the particular things you learned on this internship?
  - d. How did the internship relate to the student's coursework? What different courses might you have taken or might now take after completing this internship?
  - e. How did the work you were engaged in relate to evaluating things such as: 1) measuring trees or forests, 2) managing trees or forests, 3) biological and physical factors, 4) policy making, 5) communicating, 6) assessing ethical situations, 7) problem solving, 8) leading, 9) other activities.
6. At the completion of the internship, there shall be a one to two hour debriefing session which shall include the student, major professor, and the field supervisor (if feasible). During this debriefing the student will be asked questions such as those addressed in the written report.
7. The grade for the internship will be determined by the major professor based on the field supervisor's observations of the student's performance on the job (see attached evaluation), depth of thinking, observations contained in journal, final written report, and any written or oral presentations.

### Grading Criteria:

Daily Journal:	20%	clarity, grammar and organization
Written Report:*	50%	writing, organization, link to coursework when appropriate, and attention to deliverables listed item #5 above
Debriefing Session:	10%	ability to engage with major professor on a professional level during a one-hour discussion
Supervisor Evaluation:	20%	(see below)

\*Note: The written report should include appropriate figures, charts and maps and it should cite relevant literature. The report should not exceed 10 pages of text, double-spaced, 12 font (not including figures, charts and maps).

***Forest and Natural Resources Management Internship Agreement***

Preparation of this agreement is the responsibility of the student. It must be typed and written clearly and concisely. Please refer to the guidelines for the Internship Agreement. It must be on file with all approval signatures prior to registration for credit.

**Internship Title:**

**Approvals:**

Student: \_\_\_\_\_ Date: \_\_\_\_\_

Faculty sponsor: \_\_\_\_\_ Date: \_\_\_\_\_

Field Supervisor: \_\_\_\_\_

Date: \_\_\_\_\_

**Addresses:**

*Student:*

Phone:

Street:

City, State, Zip:

*Field Supervisor:*

*Alternate Supervisor:*

Street:

Street:

City, State, Zip

City, State, Zip

Phone:

Phone:

**Internship Objectives:**

**Scope of Work:**

**Anticipated Work Schedule:**

**Necessary Skills:**

**Previous Experience:**

**Support Being Provided:**

**Evaluation Procedures:**

**Internship Evaluation**

Supervisor: \_\_\_\_\_

Student: \_\_\_\_\_

Please rate the student intern on each of the characteristics listed below by circling the appropriate number: (1) Unsatisfactory, (2) Below Average, (3) Average, (4) Above Average, (5) Outstanding, and (6) Unable to Judge.

1. Ability to learn:	1	2	3	4	5	UTJ
2. Interest:	1	2	3	4	5	UTJ
3. Preparation of Assignments:	1	2	3	4	5	UTJ
4. Initiative:	1	2	3	4	5	UTJ
5. Quality of Work:	1	2	3	4	5	UTJ
6. Reaction to Criticism:	1	2	3	4	5	UTJ
7. Cooperation:	1	2	3	4	5	UTJ
8. Dependability:	1	2	3	4	5	UTJ
9. Judgment:	1	2	3	4	5	UTJ
10. Communication:	1	2	3	4	5	UTJ
11. Creativity	1	2	3	4	5	UTJ
12. Overall Evaluation:	1	2	3	4	5	UTJ

Were your expectations of the intern [ ] not met, [ ] met, or [ ] exceeded? How?

On the back of this page or a separate sheet, please comment on the student’s overall performance, including any strengths or weaknesses you feel are important.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## Appendix E: Department Directory\*

- Colin Beier**, Associate Professor: 311 Bray Hall, 315-470-6578, email: [cbeier@esf.edu](mailto:cbeier@esf.edu).  
Forest Ecology, Climate Change, Ecosystem Services.
- Eddie Bevilacqua**, Professor: 301 Bray Hall, 315-470-6697, email: [ebevilacqua@esf.edu](mailto:ebevilacqua@esf.edu).  
Forest Measurements and Statistics.
- Russell D. Briggs**, Distinguished Teaching Professor: 358 Illick Hall, 315-470-6989, email: [rdbriggs@esf.edu](mailto:rdbriggs@esf.edu). Forest Soils and Silviculture.
- Tristan R. Brown**, Assistant Professor: 302 Bray Hall, 315-470-3003, email: [trbrown@esf.edu](mailto:trbrown@esf.edu). Sustainable Energy Management.
- Paul Crovella**, Instructor: 219 Baker Lab, 315-470-6839, e-mail: [plcrovella@esf.edu](mailto:plcrovella@esf.edu).  
Sustainable Construction, Construction Management.
- Marie-Odile Fortier**, Assistant Professor: 307 Bray Hall, 315-470-6536. Sustainable Energy Management.
- René H. Germain**, Professor: 316 Bray Hall, 315-470-6698, email: [rhgermai@syr.edu](mailto:rhgermai@syr.edu).  
Sustainable Forestry Systems, Forest Management.
- George Kyanka**, Emeritus Professor: 223 Baker Lab, 315-470-6835, email: [ghkyanka@esf.edu](mailto:ghkyanka@esf.edu). Sustainable Construction, Construction Management.
- Mike Kelleher**, Senior Research Associate: 203 Bray Hall, 315-470-4934, email: [mkellehe@esf.edu](mailto:mkellehe@esf.edu). Sustainable Energy Management.
- Diane Kuehn**, Associate Professor: 310A Bray Hall, 315-470-6561. email: [dmkuehn@esf.edu](mailto:dmkuehn@esf.edu). Recreation Resources Management, Tourism Planning, Sustainable Tourism.
- Robert W. Malmshemer**, Professor: 305 Bray Hall, 315-470-6909, email: [rwmalms@esf.edu](mailto:rwmalms@esf.edu) Forest and Natural Resource Policy and Law.
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