Graduate Student Handbook
for
The Department of Sustainable Resources Management

SUNY College of Environmental Science and Forestry
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I. INTRODUCTION

Welcome to the 2023-24 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 Sustainable Resources Management (SRM). This version ***supersedes*** all previous Handbooks.

This handbook describes policies and procedures specific to SRM 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 (https://www.esf.edu/catalog/index.php). In addition, SRM has developed specific policies, procedures, and guidelines for the effective delivery of our graduate programs. This handbook will guide you through the complexities of SRM's graduate programs.

SRM Mission Statement

Our mission in SRM is to advance our understanding of current environmental issues through cutting edge research, education, and outreach, with a special focus on sustainably managing renewable, natural and constructed resources, including energy, forests, recreation, soils, water, and building materials, to provide short- and long-term benefits with and for people. With a group of internationally known faculty, we address these issues both locally and nationally, across a range of scales through both applied and fundamental research, technology transfer and teaching.

Graduate Education Committee and Coordinator

Dr. David Newman is the Coordinator of the SRM Graduate Education Committee, which administers all SRM graduate degrees. Feel free to ask him questions that arise from your use of this handbook and throughout your graduate education. He can be reached at dnewman@esf.edu or 315-470-6534.

Email Account

All SUNY ESF students have an email account assigned to them by the Registrar. This is your official email address. Dr. Newman 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. David Newman, Chair – Graduate Education Committee
Dr. Christopher Nowak, Chair – Department of Sustainable Resources Management

II. PROCEDURES AND POLICIES

ADMISSIONS INFORMATION FOR PROSPECTIVE GRADUATE STUDENTS

College Requirements

For applicants whose native language is not English, ESF requires either official TOEFL or IELTS scores. Total TOEFL scores must be a minimum of 80 with a score of at least 17 on each individual section on the internet-based exam. If the old paper-based TOEFL is used, the minimum score is 550; if the old computer-based TOEFL is used, the minimum score is 213. For the IELTS exam, a minimum score of 6.5 is required with no less than a 5 in Writing. 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, the student 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. Students with higher scores can also benefit from these courses.

SRM 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. For MPS, MF, MS, and PhD applicants, the GRE requirement for the application process can be waived upon request by the applicant's future Major Professor to the Graduate Education Coordinator only if the Major Professor has had extensive prior experience with the applicant (e.g., as an undergraduate instructor or advisor for the applicant). For MPS and MF students, the GRE requirement can also be waived upon request by the applicant's future Major Professor to the Graduate Education Coordinator based on a high undergraduate GPA (e.g., 3.5 GPA or above) or other example of high academic potential (e.g., refereed journal articles, other advanced degrees).

3. The Department of SRM will accept test scores only for GRE exams taken within the past five (5) years. Older GRE scores will only be accepted if:
    a. The applicant has successfully completed a graduate degree.
    b. The applicant has successfully completed graduate-level coursework within the past five years.

SRM 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.

While GRE scores and GPA are important to our evaluation of graduate applications, other factors are also fundamental to the admission decision: 1. A well written statement of education goals, and other experiences or qualifications that may indicate potential for graduate study; 2. Strong letters of reference indicating the applicant's ability to succeed in graduate school, prior experience in the field.

Admission to SRM's PhD program
PhD applicants have the same admissions requirements as MS, MF, and MPS students (see above). Though a master's degree is not required to enter SRM's PhD program, it is usually expected significant research experience and/or a MS degree is strongly recommended.

Graduate Student Assistantships
SRM offers two (2) types of assistantships: Graduate Assistantships (GA) and Research Assistantships (RA). Each year, SRM awards Graduate Assistantships based on faculty recommendations. They are used primarily to assist professors teaching undergraduate courses and/or to support faculty research. Each spring, students who will be returning in the fall are asked by the Graduate Education Coordinator to apply online for a GA; incoming students can also be included in the selection pool. Online application available. 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. To be considered for a GA, students must have a Major Professor in SRM.

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

Areas of Study and Guidelines for Coursework and Research
Selection of an appropriate area of study involves thinking well beyond the Department of Sustainable Resources Management (SRM) 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 SRM, we have four degree programs, some of which contain additional broad areas of study:

1. Degree Program: Forest Resources Management (FRM)
Areas of study:
- **Ecology and Ecosystems (EE)**
- **Economics, Governance, and Human Dimensions (EGHD)**
- **Monitoring, Analysis and Modeling (MAM)**
- **Forest Management and Silviculture (FMS)**

2. Degree Program: Natural Resources Management (NRM)

3. Degree Program: Sustainable Energy (SE)

4. Degree Program: Sustainable Construction Management (SCM)

Areas of study:

- **Construction Management (CM)**
- **Sustainable Construction (SC)**

Each program and area of study includes multiple topical and theoretical subsets for study, and can be adapted to your specific application, research, and scholarship interests.

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 scientific process. 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 SRM and ESF require seminar experiences.

SRM and ESF have a strong tradition of minimizing general requirements for graduate studies. Instead, SRM 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 Sustainable Resources Management:

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

In addition, thought should be given to the level of courses taken at ESF. Graduate level courses include those at the 500 and 600 level. MS students are required to take at least 12 credit hours of coursework at the 600 level or higher; PhD students are required to take at least 24 credit hours of coursework at the 600 level or above.

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

Some graduate students manage to complete their entire degree programs without having to file a single petition. However, because of students' diverse backgrounds, interests, degree programs, and personal lives, many students occasionally find themselves in need of an alternative means of meeting a College or SRM requirement. The correct vehicle to use is a Petition (see Appendix A for more information regarding petitions). Petition forms may be obtained from the Registrar's Office (111 Bray Hall).

Rules for Changing Degree Programs

Students can switch degree programs (i.e., MF, MPS, MS, or PhD) at any time with approval of their committee (as shown via a revised 3B form) and by petition to the SRM Graduate Education Committee.

Cumulative GPA Requirements

All graduate students in SRM 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 academic 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.

Farnsworth Fellowships are presented to both an MS and PhD student who demonstrate and hold promise for scholarship and service in Sustainable Resources Management. The SRM 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 fall. Announcements for applications are distributed to students and faculty each year in the spring.

Awards and Scholarships. The **Leaf Award** is presented to a graduate student who has a record of, and shows promise for, research in Sustainable Resources Management. The SRM Awards Committee selects Leaf recipients. Faculty (usually the major professor) nominate students for the Leaf Award. The Leaf Award is presented in the fall. Announcements for applications are distributed to faculty each spring.

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 SRM. An SRM 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 SRM 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 fall. Announcements for applications are distributed to faculty each spring.

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 SRM Awards Committee selects the recipients. Faculty (usually the major professor) nominate students for the Bauer Scholarship. Announcements for applications are distributed to faculty each spring.

The **Jay and Olive Bentley Scholarship** is awarded to support graduate students in the MF and the MPS programs within SRM. The SRM 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 Sustainable 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 Credit: 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. Auditing the Course: 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 at the Ranger School in Wanakena, NY. All MF students must begin the program with this important foundational field course.

The Department of Sustainable Resources Management (SRM) uses a checklist to facilitate detailed program planning and to document 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 Graduate School (227 Bray Hall). During the first or second semester you, in consultation with your major professor, will finalize your steering committee. To have your steering committee assigned, you must submit Form 2A. This form must be signed by the Chair of the Graduate Education Committee and recorded by the SRM 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, though the College requires a minimum of thirty (30) graduate credit hours for most Masters-level degrees, thirty-seven (37) credit hours in graduate coursework are required by the SRM Department 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 (Table 1) 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 SRM 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 SRM 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 in Table 2 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.

Table 1. MF Degree Requirements.

Required Core Forestry Courses	Credit Hours
Undergraduate Required Core	
FOR 304 Adirondack Field Studies	4
ESF 300 Introduction to Geospatial Information Technologies	3
EFB 336 Dendrology	3
Total Undergraduate Credit Hours	10
Graduate Required Core	
Forest Resources Management Directed Elective*	3
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 689 Natural Resources Law and Policy	3
FOR 690 Integrated Resources Management	3
FOR 898 Professional Experience/Internship	3
Total Graduate Credit Hours	**37**

* For example, FOR540, FOR642, FOR680, EFB502, EFB551 (must be approved by steering committee).

Table 2. SUNY and SRM General Education requirements.

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

The undergraduate core includes an off-campus, 4-week summer field course, FOR 304 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.

Courses in the SAF-defined Areas of Study:

1. **Forest Ecology and Biology requirement**

FOR 532 Forest Ecology
FOR 534 Silviculture
FOR545 Introduction to Soils

2. **Management of Forest Resources requirement**

FOR522 Forest Mensuration
FOR523 Forest Biometrics

3. **Management of Forest Resources requirement**

FOR533 Managerial Economics for Environmental Professionals
FOR570 Forest Management Decision Making and Planning
FOR573 Forest Operations

4. **Forest Resource Policy and Administration requirement**

FOR665 Natural Resources Policy
FOR689 Natural Resources Agencies and Administration

You may petition to have specific core forestry courses waived based on your academic background. The SRM 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 https://www.esf.edu/graduate/current/graddegreq.php). This form must be signed by your major professor, your steering committee member, and the Chair of the Graduate Education Committee (Table 3). The SRM 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, your steering committee member, and the Chair of the Graduate Education Committee) to the SRM Graduate Secretary.

Table 3. Department of Sustainable Resources Management MF Checklist.

Step	Procedure	Responsibility	Target date	Date done
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	__/__/__

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 Sustainable 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 Sustainable Resources Management. As such, the program is designed to be the first professional degree in Sustainable Resources Management. Graduates will successfully function as professional managers on multi-disciplinary Sustainable 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 a 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 Sustainable Resources Management (SRM) 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 SRM 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 https://www.esf.edu/graduate/current/graddegreq.php). Two co-major professors count as two committee members. During the first or second semester you, in consultation with your major professor, should finalize your steering committee. To have your steering committee assigned, you must submit Form 2A: Steering Committee. This form must be signed by the Chair of the Graduate Education Committee and recorded by the SRM 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 and Capstone Requirements

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 (Tables 4-8). A capstone course (3 credit hours) is required for the MPS in SRM, and a professional experience/synthesis course (3 credit hours) is required for both the Sustainable Construction and Construction Management MPS degrees; these 3 credit hours are included as part of the 30 credit hours required. The capstone/synthesis course requires students to integrate and apply their knowledge of Sustainable Resources Management to practical problems of their own design in their areas of interest, in consultation with clients whom they identify to be in need of their professional services. Students can petition to meet their capstone requirement via completion of FOR/SRE 798 (Research Problems in SRM) or FOR/SRE 898 (Professional Experience/Internship; the SRE course prefix is only for students in the Sustainable Energy program). General graduate requirements are set by the College (see the College Catalog available at http://www.esf.edu/catalog).

Seminars
Topical seminars are courses that provide an opportunity for student discussion and presentation on topics related to natural resources management. These courses are usually 1-credit-hour courses. MPS students in the FRM, NRM, SE, and SCM (SC and CM study areas) degree programs are encouraged, but not required, to take topical seminars.

Table 4. Program specific requirements for the MPS in Forest Resources Management.

Course Requirements	Credit Hours
A. A graduate level course in statistics	3
B. FOR560 Principles of Management (or equivalent; if waived, add 3 hours to E or F)[1]	3
C. FOR692 Capstone in Sustainable Resources Management	3
D. Graduate course in environmental or scientific writing, or demonstration of ability (if waived, add 3 hours to E or F)[2]	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
Total Credit Hours[3]	**30**

[1] 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.
[2] 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.
[3] 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.

Table 5. Program specific requirements for the MPS in Natural Resources Management.

Course Requirements	Credit Hours
A. Tools and methods elective[1]	3
B. Biophysical Science and Management elective[1]	3
C. Social Science elective[1]	3
D. FOR692 Capstone in SRM, FOR 798 Research Problems in SRM, or FOR 898 Prof. Experience/Internship	3
E. Specialization electives[1]	18
Total Credit Hours	**30**

[1] See Appendix C for the list of courses.

Table 6. Program specific requirements for the MPS in Sustainable Energy Management.

Course Requirements	Credit Hours
A. Specialization electives[1]	27
B. FOR 692 Capstone in SRM, SRE 798 Research Problems in SE, or SRE 898 Prof. Experience/Internship	3
Total Credit Hours	**30**

[1] See Appendix D for the list of courses.

Table 7. Program specific requirements for the MPS in Construction Management.

Course Requirements	Credit Hours
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[1]	6 – 12
F. Open elective courses[1]	3 – 9
G. CME 898 Professional Experience/Synthesis	3 – 6
Total Credit Hours	**30**

[1] See Appendix E for the list of courses.

Table 8. Program specific requirements for the MPS in Sustainable Construction.

Course Requirements	Credit Hours
A. Core courses[1]	12
B. Construction management courses[1]	6 – 12
C. Application elective courses[2]	3 – 9
D. CME 898 Professional Experience/Synthesis	3 – 6
Total Credit Hours	**30**

[1] See Appendix F for the list of courses.

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 https://www.esf.edu/graduate/documents/formatguidelines.pdf). 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 (Table 9). The SRM 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 SRM Graduate Secretary.

Students in the FRM, NRM, SE, and CM degree programs must additionally complete the "MPS Course List" for their specific program/study area (see Appendix B) and submit it with their 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.

Table 9. Department of Sustainable Resources Management MPS 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 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 Sustainable 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 Sustainable 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 Sustainable Resources Management (SRM) 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 SRM 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 https://www.esf.edu/graduate/documents/formatguidelines.pdf). 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. This form must be signed by the Chair of the Graduate Education Committee and recorded by the SRM 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/SRE 899: Master's Thesis). These general graduate requirements are set by the College (see the College Catalog, available at www.esf.edu/catalog). Students develop programs of study to satisfy their coursework requirement in consultation with their major professor and steering committee. Coursework should provide a coherent body of theory, a set of appropriate methods to test that theory, and should focus on an important area of application beyond the specific work done for the graduate degree (see Appendix C for guidance in coursework).

Specific course requirements exist for the MS in Construction Management only. Students are required to take CME 543 Construction Estimating (3 credit hours), CME 653 Construction Planning and Scheduling (3 credit hours), and CME 654 Construction Project Management (3 credit hours), or the equivalent with committee approval. Other MS programs do not have specific course requirements.

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

Seminars
Topical seminars are courses that provide an opportunity for student discussion and presentation on topics related to natural resources management. These courses are usually 1-credit-hour courses.

For MS students in the FRM, NRM, CM, and SC degree programs: Students are required to take two (2) topical seminars (seminars range from 1 to 3 credit hours). Any "797" course taught at ESF (e.g., FOR 797, CME 797, SRE 797, EFB 797, EST 797) can be used to fulfill this seminar requirement. In addition, any FOR 796 class that is explicitly listed in the college catalog as a "seminar" can fulfill this requirement. Other classes not explicitly identified as seminar courses must be approved by the Graduate Education Committee via petition to count as a seminar course.

For MS students in the SE degree program: SE students are required to take 1 credit hour of SRE 797 Sustainable Energy Seminar during each semester for which they are registered; a minimum of 2 credit hours of SRE 797 Sustainable Energy Seminar in total is required. Approval of the student's Steering Committee (via the student's 3B form) is required if other seminar classes are used to fulfill this requirement.

Capstone
All MS students must present a capstone seminar on their thesis work. You must Request the appointment of aa defense committee and committee chair (Form 5B) through CGEC to OIGS). You should submit all of your capstone information to the SRM 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, and your committee chair. This information must be given to the SRM Secretary (Ms. Stephanie Melnyczuk, 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. Melnyczuk will produce a flyer and have copies posted around campus. A student presentation of the thesis work in a FOR/SRE 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 https://www.esf.edu/graduate/documents/formatguidelines.pdf). 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 (Table 10). The SRM 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 SRM 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.

SRM accepts two thesis styles: 1) the traditional style or 2) the manuscript style. The traditional style is described at https://www.esf.edu/graduate/documents/formatguidelines.pdf. 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 SRM 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 https://www.esf.edu/graduate/documents/formatguidelines.pdf) 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.

Table 10. Department of Sustainable 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 SRM 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 Sustainable 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, or those who did not complete a Master's degree prior to beginning their PhD degree, may require more than five (5) years to complete the program.

The Department of Sustainable Resources Management (SRM) 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 SRM 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 SRM policy, or find a need to create proper documentation for their academic file. The correct vehicle to use is a Petition (see Appendix A for more information on petitions). Petition forms may be obtained from the Registrar's Office (111 Bray Hall).

Prerequisites

Students can be accepted into SRM's PhD program without a Master's degree, though prior research experience is strongly recommended and a Master's degree is preferred. 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 https://www.esf.edu/graduate/current/graddegreq.php). 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 https://www.esf.edu/graduate/current/graddegreq.php). This form must be signed by the Chair of the Graduate Education Committee and recorded by the SRM 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/SRE 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). 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, SRM has established the following specific requirements:

Seminars
Topical seminars are courses that provide an opportunity for student discussion and presentation on topics related to natural resources management. These courses are usually 1-credit-hour courses.

For PhD students in the FRM, NRM, CM, and SC degree programs: Students are required to take two (2) topical seminars (seminars range from 1 to 3 credit hours). Any "797" course taught at ESF (e.g., FOR 797, CME 797, SRE 797, EFB 797, EST 797) can be used to fulfill this seminar requirement. In addition, any FOR 796 class that is explicitly listed in the college catalog as a "seminar" can fulfill this requirement. Other classes not explicitly identified as seminar courses must be approved via petition to count as a seminar course.

For PhD students in the SE degree program: SE students are required to take 1 credit hour of SRE 797 Sustainable Energy Seminar in each semester for which they are registered; a minimum of 2 credit hours of SRE 797 Sustainable Energy Seminar in total is required. Approval of the student's Steering Committee (via the student's 3B form) is required if other seminar classes are used to fulfill this requirement.

Capstone
All PhD students must present a capstone seminar on their thesis/dissertation work. You must Request the appointment of aa defense committee and committee chair (Form 5B) through CGEC to OIGS). The student's presentation in a FOR/SRE 797 course may be used as the capstone seminar if it is so advertised. You should submit all of your capstone information to the SRM 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 SRM Secretary (Ms. Stephanie Melnyczuk, 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. Stephanie Melnyczuk 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 https://www.esf.edu/graduate/current/graddegreq.php). 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 (Table 11). The SRM 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 SRM 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 https://www.esf.edu/graduate/current/graddegreq.php) 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.

SRM accepts two dissertation styles: 1) the traditional style or 2) the manuscript style. The traditional style is described at https://www.esf.edu/graduate/documents/formatguidelines.pdf. 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 SRM 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 https://www.esf.edu/graduate/current/graddegreq.php) 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.

Table 11. The Department of Sustainable Resources Management PhD Checklist.

Step	Procedure	Responsibility	Target Date	Date Done
1.	Decide upon general area of study.	Student (in consultation with major professor)	First/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 SRM 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 SRM 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: https://www.esf.edu/research/documents/ORPPolicy10DataOwnership.pdf).
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. CLASSROOM ETIQUETTE EXPECTATIONS

The following are guidelines for polite and civil behavior in our classrooms. These guidelines were developed by the SRM faculty with the intent of modeling and promoting professional development.

Arrive to class on time. Entering the classroom after the professor's lecture has started is distracting to the professor and to other students. Students who arrive late should consult other students about any announcements made at the beginning of class. Quizzes missed by late arrival may not be "made up" except at the discretion of the professor.

Be attentive in class. If you are going to make the effort to arrive on time and be in class, you should also make the effort to stay actively engaged in class. Refrain from chatting or making comments off-topic during class.

Avoid walking out once class has started. Students should not normally leave or re-enter the classroom during the class period unless it is urgent. For instance, leaving to get a drink, to fill your water bottle or to use your phone, except in genuine emergencies, is not urgent. This behavior is distracting, and gives the impression that you do not respect the professor and the educational process taking place. If you expect you will need to leave class for any reason, notify the professor before class begins.

Turn off the smartphone and put it away. Texting, social media, and engaging in all other forms of smartphone use is distracting to the professor and fellow students. If you need to have your phone on for an emergency, let the professor know in advance and set your phone to vibrate.

You may use laptops and other devices to take notes, but please refrain from using them for activities unrelated to the class. This behavior can be distracting to your classmates around you and may interfere with your learning.

Before recording a professor's lecture or taking pictures of presentation slides, ask for permission. This is for two reasons. First, a classroom lecture could be considered a private conversation. Thus, everyone who would be recorded would need to consent — that includes your professor and your classmates. Second, classroom lectures are considered intellectual property of the professor. By recording or taking pictures without the professor's consent, you are in effect violating his or her copyright on the lecture.

Show patience toward the end of class. The professor has the right to finish his or her thought at the end of the class period. Please do not start putting books away, closing up notebooks, and zipping up book bags 5 minutes before the official end of class.

IX. RESOURCES

SRM Offices: 320 Bray Hall

Dr. Christopher Nowak is the Chair of the Department of Sustainable Resources Management (SRM). His office is located in 320 Bray Hall. His phone number is 315-470-6534 and his email address is canowak@esf.edu.

Dr. David Newman is the Coordinator of the SRM Graduate Education Committee, which administers the MF, MPS, MS and PhD degrees. His office is located in 309 Bray Hall. His phone number is 315-470-6534 and his email address is dnewman@esf.edu.

Feel free to contact Drs. Newman and Nowak regarding any questions, comments, or concerns about SRM graduate programs.

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 office space as needed. The process of securing office space is facilitated by your major professor and the Department Secretary, Ms. Stephanie Melnyczuk.

Keys

Keys for office space and related building access may be obtained by formal request to Ms. Stephanie Melnyczuk (smelnycz@esf.edu; 320 Bray Hall). She will fill out cards and have them signed by SRM's Chair (Dr. Christopher Nowak). The "Key Procedure" can be located on the ESF Website: https://www.esf.edu/employees/policies/policies-keys.php.

Email Communication

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

Computers and the Internet

Syracuse University has various computer facilities available for student use. Computer clusters at Syracuse University are described on their web site (https://answers.syr.edu/display/ITHELP/ITS+Computer+Labs). At SUNY ESF,

computers are available in the Academic Computer Center in Baker Laboratory. In addition, SRM maintains a computer cluster in 416 Bray. These computers are for use by graduate students within SRM or those within GPES having a Major Professor in SRM. The entire campus is wired for Internet access. Wifi is available in most offices and classrooms.

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 can be arranged through your major professor and by contacting Heather Engelman in 415 Bray Hall (engelman@esf.edu).

Conference Rooms: 314 and 324 Bray Hall

Conference rooms in 314 and 324 Bray Hall provide settings for meetings and seminars, including graduate student capstone seminars. Please contact Ms. Melnyczuk in 320 Bray Hall to find and reserve an alternate meeting space.

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 without a petition, by 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 see only 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, likely obtained from a catalog on the internet.

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 SRM 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 for FRM degree[1]

Student _____ Date _____

Requirements/Courses[2]	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 Sustainable 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[3] 1._____ 2._____ 3._____ 4._____ 5._____ 6._____ 7._____	 ____ ____ ____ ____ ____ ____ ____
F. At least 3 graduate credit hours in quantitative methods or geographic information systems 1. _____ 2. _____	 ____ ____
Total (must be at least 30)	____

[1]Attach this form to the MPS 3B form.
[2]No course may be used to satisfy more than one requirement.
[3]No more than three (3) credits of a professional experience or internship (FOR898) may be used towards the thirty (30) credits.

MPS Course List for NRM degree[1]

Student _____ Date _____

Requirements/Courses[2]	Credits
A. Tools and methods elective _____	____
B. Biophysical Science and Management elective _____	____
C. Social Science elective _____	____
D. Capstone Experience: FOR 692, FOR 798, or FOR 898 _____	____
E. At least 18 graduate credit hours of specialization electives[3] 1._____ 2._____ 3._____ 4._____ 5._____ 6._____	 ____ ____ ____ ____ ____ ____
Total (must be at least 30)	____

[1]Attach this form to the MPS 3B form.
[2]No course may be used to satisfy more than one requirement.
[3]See Appendix C for specialization electives.

MPS Course List for CM degree[1]

Student _____ Date _____

Requirements/Courses[2]	Credits
A. CME 543 Construction Estimating	____
B. CME 653 Construction Planning and Scheduling	____
C. CME 654 Construction Project Management	____
D. CME 658 Construction Contracts and Specifications	
D. Professional Experience/Synthesis: CME 898	____
E. Directed electives[3] (6-12 credits) 1._____ 2._____ 3._____ 4._____	 ____ ____ ____ ____
E. Open electives[3] (3-9 credits) 1._____ 2._____ 3._____	 ____ ____ ____
Total (must be at least 30)	____

[1]Attach this form to the MPS 3B form.
[2]No course may be used to satisfy more than one requirement.
[3]See Appendix E for electives.

MPS Course List for SC degree[1]

Student _____ Date _____

Requirements/Courses[2]	Credits
A. Core courses[3] (12 credits)	
1._____	____
2._____	____
3._____	____
4._____	____
B. Construction Management courses[3] (6-12 credits)	
1._____	____
2._____	____
3._____	____
4._____	____
C. Application electives[3] (3-9 credits)	
1._____	____
2._____	____
3._____	____
D. Professional Experience/Synthesis: CME 898	____
Total (must be at least 30)	____

[1]Attach this form to the MPS 3B form.
[2]No course may be used to satisfy more than one requirement.
[3]See Appendix F for courses/electives.

Appendix C. Examples of specialization electives for the MPS in Natural Resources Management*

Course Title	CH
APM 510 Statistical Analysis[3]	3
APM 620 Experimental Design &	3
APM 625 Sampling Methods[3]	3
APM 630 Regression Analysis[3]	3
APM 635 Multivariate Statistical	3
APM 645 Nonparametric Statistics [3]	3
APM 730 Advanced Regression	3
EFB 502 Ecol. & Mgt. of Invasives Sp. [1]	3
EFB 512 Intro. Personal Interp. Methods[2]	3
EFB 516 Ecosystems[1]	3
EFB 518 Systems Ecology[1]	3
EFB 521 Princ. Interpretive Program.[2]	3
EFB 523 Tropical Ecology[1]	3
EFB 530 Plant Physiology[1]	3
EFB 605 Indigenous Issues & the Env. [2]	3
EFB 617 Non-personal Env. Interp.[2]	3
EFB 622 Appl. of Interp. to Sci. Educ.[2]	3
EFB 645 Plant Ecol. & Global Change[1]	3
EFB 650 Landscape Ecology[1]	3
EFB 687 Fisheries Science & Mgt. [1]	3
EFB 797 Topical Seminar	1
EFB 681 Aquatic Ecosystem Rest. [1]	3
ENS 601 Water Resources Mgt. [1]	3
ENS 607 Wetland Practicum[1]	2-3
ERE 565 Principles of Remote Sensing[3]	3
EST 550 Environmental Impact Analysis	3
EST 600 Foundations of Env. Studies[2]	3
EST 603 Research Methods & Design[3]	3
EST 604 Social Survey Res. Methods[3]	3
EST 650 Env. Percep. of Human Behavior[2]	3
EST 660 Land Use Law[2]	3
EST 702 Env. & Nat. Res. Program Eval.[2]	3
EST 705 Environ. Policy Analysis[2]	3
EST 708 Social Theory & the Env. [2]	3

Course Title	CH
EST 797 Topical Seminar	1-3
EST 605 Qualitative Methods[3]	3
EST 606 Env. Risk Perception	3
EST 608 Env. Advocacy Campaigns[2]	3
EST 609 Collaborative Governance[2]	3
EST 612 Env. Policy & Governance[2]	3
EST 625 Wetland Mgt. Policy[2]	2
EST 626 Concepts of Sustain. Dev. [2]	3
EST 635 Pub. Partic. & Dec. Making[2]	3
EST 640 Env. Thought and Ethics[2]	3
EST 645 Mass Media & Env. Affairs[2]	3
FOR 521 Forest Ecology & Silvic.[1]	3
FOR 532 Forest Ecology[1]	4
FOR 533 Nat. Res. Managerial Econ. [2]	3
FOR 535 Advanced Forest Soils[1]	3
FOR 538 Meteorology[1]	3
FOR 540 Watershed Hydrology[1]	3
FOR 545 Introduction to Soils[1]	3
FOR 557 Fundamentals of GIS[3]	3
FOR 560 Principles of Mgt. [1]	3
FOR 570 For. Mgt. Decision Making[1]	3
FOR 642 Watershed Ecology & Mgt. [1]	3
FOR 659 Advanced GIS[3]	3
FOR 665 Natural Resources Policy[2]	3
FOR 670 Resource and Env. Econ.[2]	3
FOR 687 Env. Law & Policy[2]	1
FOR 689 Natural Res. Law & Policy[2]	1-
FOR 690 Integrated Resources Mgt. [1]	3
FOR 692 Capstone in NRM (MPS)	3
FOR 796 Ecophys of Trees & Forests[1]	3
FOR 797 Topical Seminar	1
FOR 798 Research Problems in SRM	3
FOR 898 Prof. Experience/Internship	3

* Courses selected will be approved by student's steering committee.
[1] Biophysical Science and Management course; [2] Social Science course; [3] Tools and Methods course.

Appendix D. Examples of specialization electives for the MPS in Sustainable Energy*

Specialization electives:

Course Title	Credits	Course Title	Credits
APM 510: Statistical Analysis	3	FOR 557: Fundamentals of GIS	3
APM 620: Exp. Design & ANOVA	3	FOR 560: Principles of Management	3
APM 625: Sampling Methods	3	FOR 642: Watershed Ecol. & Mgt.	3
APM 630: Regression Analysis	3	FCH 510: Environmental Chemistry I	3
APM 635: Multivariate Stat. Methods	3	FCH 525: Oceanography	3
APM 645: Nonparametric Statistics	3	FOR 659: Advanced GIS	3
APM 730: Adv. Regression Modeling	3	FOR 665: Natural Resources Policy	3
BPE 535: Transport Phenomena	3	FOR 670: Resource & Env. Economics	3
CEN 661: Env. Chemistry & Analysis	3	FOR 689: Nat Resources Law & Policy	3
CME 504: Environment Performance Measures for Buildings	3	FOR 692: Capstone in SRM	3
CME 505: Sustainable Energy Systems for Buildings	3	FOR 694: Writing for Scientific Publications	3
EFB 634: Ecosyst. Restoration Design	4	PSE 561: Engineering Thermodynamics	3
ERE 519: Green Entrepreneurship	3	PSE 570: Principles of Mass and Energy Balances	3
ERE 530: Numerical & Computing Methods	3	PSE 571: Fluid Mechanics	3
ERE 621: Spatial Analysis	3	SRE 525: Energy Systems	3
ERE 693: GIS-Based Modeling	3	SRE 535: Renewable Energy	3
EST 550: Environmental Impact Analysis	3	SRE 619: Energy Policy Assessment	3
EST 627: Env. & Energy Auditing	3	SRE 622: Energy Markets & Regulation	3
EST 705: Environmental Policy Analysis	3	SRE 641: Biomass Energy	3
FOR 532: Forest Ecology	3	SRE 679: Life Cycle Assessment	3
FOR 535: Advanced Forest Soils	3	SRE 797: Sustainable Energy Seminar	1
FOR 538: Meteorology	3	SRE 798: Research Problems in SE	1-12
FOR 545: Introduction to Soils	3	SRE 898: Professional Experience in SE	1-6
		SRE 797: Sustainable Energy Seminar	1

Appendix E. Directed and open electives for the MPS in Construction Management.

Directed elective courses: 6 - 12 credits required. Select additional courses from these or similar courses with committee approval:

Course		Credits
CME 525	Construction Methods and Equipment	3
CME 531	Construction Safety	3
CME 535	Cost Engineering	3
CME 658	Construction Contracts and Specifications	3

Open elective courses: 3 - 9 credits required. Choose from the following or similar courses with committee approval:

Course		Credits
FOR 665	Natural Resources Policy	3
FOR 670	Resource and Environmental Economics	3
FOR 680	Urban Forestry	3
FOR 687	Environmental Law and Policy	3
FOR 689	Natural Resources Law and Policy	3
FOR 770	Ecological Economics and Policy	3
EST 550	Environmental Impact Analysis	3
EST 603	Research Methods and Design	3
EST 604	Social Survey Research Methods for Env. Issues	3
EST 605	Qualitative Methods	3
EST 626	Concepts and Principles of Sustainable Development	3
EST 627	Environmental and Energy Auditing	3
EST 635	Public Participation and Decision Making	3
EST 640	Environmental Thought and Ethics	3
EST 660	Land Use Law	3

Appendix F. Core and elective courses for the MPS in Sustainable Construction.

Core courses: 12 credits required from the following list. Similar courses can be accepted with committee approval:

Course		Credits
CIE 678	Rehabilitation of Civil Infrastructure	3
CME 504	Environmental Performance Measures for Building	3
CME 505	Sustainable Energy Systems for Buildings	3
CME 532	Mechanical and Electrical Equipment	3
CME 565	Sustainable Innovations in Residential Construction	3
CME 605	Building Info. Modeling for Construction Management	3

Construction management courses: 6 - 12 credits required. Select additional courses from the list below or similar courses with committee approval:

Course		Credits
CME 543	Construction Estimating	3
CME 653	Construction Planning and Scheduling	3
CME 654	Construction Project Management	3

Application electives: 3 - 9 credits required. Choose from the following or similar courses with committee approval:

Course		Credits
EST 550	Environmental Impact Analysis	3
EST 603	Research Methods and Design	3
EST 604	Social Survey Research Methods for Env. Issues	3
EST 605	Qualitative Methods	3
EST 626	Concepts and Principles of Sustainable Development	3
EST 627	Environmental and Energy Auditing	3
EST 635	Public Participation and Decision Making	3
EST 640	Environmental Thought and Ethics	3
EST 660	Land Use Law	3
FOR 665	Natural Resources Policy	3
FOR 670	Resource and Environmental Economics	3
FOR 680	Urban Forestry	3
FOR 687	Environmental Law and Policy	3
FOR 689	Natural Resources Law and Policy	3
FOR 770	Ecological Economics and Policy	3

Appendix G. Description of Manuscript Option for Writing MS Thesis and PhD Dissertation.

As an alternative to the traditional thesis, the Department of Sustainable Resources Management (SRM) 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 SRM.

SRM 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. 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 for publication. The student may initiate the submission process following the successful completion of each manuscript or following the successful defense.

The student must select an appropriate journal 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 H: 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 SRM 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).

Sustainable 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 I: Department Faculty Directory*

Susan Anagnost, Visiting Professor and Director, Tropical Timber Information Center: 101 Baker Lab, 315-470-6837, email: seanagno@esf.edu. Wood Anatomy, Wood Decay, Microscopy

Colin Beier, Associate Professor: 311 Bray Hall, 315-470-6578, email: cbeier@esf.edu. Forest Ecology, Climate Change, Ecosystem Services.

Eddie Bevilacqua, Professor and Undergraduate Education Coordinator: 301 Bray Hall, 315-470-6697, email: ebevilacqua@esf.edu. Forest Measurements and Statistics.

Russell D. Briggs, Distinguished Teaching Professor: 202 Baker Lab, 315-470-6989, email: rdbriggs@esf.edu. Forest Soils and Silviculture.

Tristan R. Brown, Associate Professor: 302 Bray Hall, 315-470-3003, email: trbrown@esf.edu. Sustainable Energy Management.

Mariela Cavo, Assistant Professor: 310A Bray Hall, 315-470-6561, email: mcavo@esf.edu. Environmental Economics, Economics, Sustainable Development.

Paul Crovella, Assistant Professor: 219 Baker Lab, 315-470-6839, email: plcrovella@esf.edu. Sustainable Construction, Construction Management.

John E. Drake, Associate Professor, 308 Bray Hall, 315-470-6835, email: jedrake@esf.edu. Forest Ecology, Ecophysiology.

René H. Germain, Professor: 316 Bray Hall, 315-470-6698, email: rhgermai@esf.edu. Forest Operations and Management, Sustainable Forestry Systems.

Cole D. Gross, Assistant Professor, 312 Bray Hall, 314-470-4788, email: cdgross@esf.edu. Agroforestry, Soil Carbon, Soil Health, Sustainable Ecosystem Management.

Mohammad Uzzal Hossain, Assistant Professor, 222 Baker Lab, 315-470-6835, email: mhossa18@esf.edu. Sustainable Built Environment, Low Carbon Construction Materials Design, Circular Economy, Building Energy Simulation and Modeling.

Danielle Kloster, Assistant Professor, 303A Bray Hall, 315-470-6594, email: dpkloste@esf.edu. Human Dimensions of Natural Resources, Sustainable Energy and the Bioeconomy.

Robert W. Malmsheimer, Distinguished Teaching Professor: 305 Bray Hall, 315-470-6909, email: rwmalmsh@esf.edu. Forest and Natural Resource Policy and Law, Sustainable Energy and Bioenergy Policy.

David H. Newman, Professor and Graduate Education Coordinator: 309 Bray Hall, 315-470-6534, email: dnewman@esf.edu. Forest Resource Economics and Policy, Resource and Environmental Economics, Tax Policy.

Christopher A. Nowak, Professor and Chair: 320 Bray Hall, 315-470-6575, email: canowak@esf.edu. Silviculture, Intensive Forestry, Forest Vegetation Management.

Richard Ross Shaker, Assistant Professor: 323 Bray Hall, 315-470-6558, email: rrshake@esf.edu. Environmental & Sustainability Indicators; Sustainable Development, Global Change, Landscape Ecology, Applied Statistics, GIS/Spatial Analysis, Ecological Restoration, Environmental Planning & Management.

William Smith, Professor: 218 Baker Lab, 315-470-6832, email: wbsmith@esf.edu. Wood Drying and Moisture Relations, Wood Preservation and Protection, Manufacturing and Processing, Wood Properties and Utilization, Marketing.

Stephen V. Stehman, Distinguished Teaching Professor: 322 Bray Hall, 315-470-6692, email: svstehman@esf.edu. Statistics, Sampling.

John Stella, Professor and Vice President of Research: 200 Bray Hall, 315-470-6609, stella@esf.edu: Riparian ecology, Ecohydrology, Restoration, Watershed management, Dendroecology, Mediterranean Ecosystems.

Obste Therasme, Assistant Professor: 307 Bray Hall, 315-470-4934, email: otherasm@esf.edu**.** Life Cycle Assessment, Sustainable Energy System Analysis.

Andrew Vander Yacht, Assistant Professor: 310B Bray Hall, 315-470-6568, email: avandery@esf.edu**.** Silviculture, Fire Science.

Timothy Volk, Professor: 306 Bray Hall, 315-470-6774, email: tavolk@esf.edu. Biomass and Bioenergy, Short Rotation Forestry, Agroforestry, Phytoremediation, Renewable Energy.

John E. Wagner, Professor: 304 Bray Hall, 315-470-6971, email: jewagner@esf.edu. Forest Resource and Environmental Economics.

Endong Wang, Associate Professor: 223 Baker Hall, 315-470-6747, email: ewang01@esf.edu. Sustainable Construction Management.

Ruth Yanai, Distinguished Professor: 176 Baker Lab, 315-470-4868, email: rdyanai@esf.edu. Northern Hardwood Ecosystems, Quantifying Uncertainty in Ecosystem Studies, REDD+ Carbon Accounting for Climate Mitigation.

Nathan L. Young, Assistant Professor: 414A Bray Hall, 315-470-6675, email: nyoung07@esf.edu. Hydrogeology and hydrology

*SRM faculty who serve as Major Professors