



## **General Guidelines for the Degree of Master of Science in Natural Resources Revised: October 2020**

### **Introduction**

Welcome to the Master of Science Program at the Rubenstein School of Environment and Natural Resources. The Rubenstein School is a vibrant learning community. Upon successful completion of the requirements outlined below, you will earn a Master of Science in Natural Resources. You may also declare an area of concentration, which include 1) Aquatic Ecology and Watershed Science, 2) Environment, Society, and Public Affairs, 3) Environmental Thought and Culture, 4) Forest and Wildlife Sciences, and 5) Dual Degree with Vermont Law School.

During the first year of your program, you will select a faculty committee that will mentor you through your program. However, it is your responsibility to ensure that all degree requirements are met. This document describes the degree requirements for all Master of Science students at the University of Vermont, as well as additional requirements set forth by the Rubenstein School and associated concentration requirements. The Graduate Catalogue defines student rights and responsibilities, and describes models for selecting and working with an advisor. You may, with written support from your advisor, request exceptions from the Rubenstein Graduate Standards Committee to any of the provisions of the Rubenstein School requirements as outlined below.

You must fulfill the general requirements set forth by the Graduate College in the University Catalogue for the degree of Master of Science in Natural Resources:

<http://catalogue.uvm.edu/graduate/degreerequirements/requirementsforthemastersdegree/>

The Graduate College maintains a website where you will find services, forms, and policies outlined.

<https://www.uvm.edu/graduate>

<https://www.uvm.edu/graduate/resources>

## **Degree Requirements**

The faculty of the Rubenstein School has established the requirements that follow for the M.S. in Natural Resources.

**I. Individual Development Plan (IDP):** Students shall complete an Individual Development Plan, required by the end of the first semester for first year students. The IDP must be submitted to the Rubenstein Graduate Student Services Specialist as a Graduate Requirement. It is recommended that students complete and/or update their IDP every year of the program.

**Resources for the IDP can be found on the RSENR graduate resources page:**

[https://www.uvm.edu/rsenr/graduate\\_student\\_resources](https://www.uvm.edu/rsenr/graduate_student_resources)

[https://www.uvm.edu/sites/default/files/Rubenstein-School-of-Environment-and-Natural-Resources/RSENR\\_IDP\\_2018\\_2.pdf](https://www.uvm.edu/sites/default/files/Rubenstein-School-of-Environment-and-Natural-Resources/RSENR_IDP_2018_2.pdf)

**II. Program of Study:** You must have a Program of Study Form completed and approved by your committee and the Graduate Program Coordinator of the Rubenstein School.

**III. Coursework: A minimum of 30 credits and a grade point average of 3.0 or higher are required.** Distribution of these credits varies by concentration as outlined below. To successfully complete the M.S. in Natural Resources you must maintain a grade point average of at least 3.0. If two or more grades below 3.0 or "B" are received, you may be dismissed from the Graduate College.

- You will need a minimum of 15 credits of grade-bearing graduate-level coursework at the University of Vermont.  
(<http://catalogue.uvm.edu/graduate/courses/>).

These 15 credits of coursework must include:

- NR 395: Applied Ecology, Environment and Society (2 credits). This course provides a cohort experience from two or more disciplines. The course allows students to see how ideas are connected and promotes collaboration and critical thinking. This course must be taken during your first fall semester. Any deviation from this timeline must be pre-approved by the Graduate Standards Committee.
- NR 306: Envisioning a Sustainable Future (2 credits). This course provides an opportunity to expand your understanding and appreciation of diversity issues, and engender within yourself the strength and perspective to listen to, and respect, voices and ideas that differ from your own. This course must be taken during your first fall semester. Any deviation from this timeline must be pre-approved by the Graduate Standards Committee.
- Additional courses required by your concentration (see below)
- 100/200 Level Coursework — You may apply for permission from your advisor and the Graduate College to be allowed **up to three credits** 100/200 level coursework toward your graduate program. Approval must be obtained

before enrolling in the class.

- The remaining 15 credits may consist of additional coursework, M.S. thesis research credits (NR 391) and/or M.S. project research credits (NR 392), depending on your area of concentration.
- Transfer credit: Up to nine credits may be transferred if approved by the Graduate College; when approved, only credits are transferred, not grades. Thus transferred credits do not count toward the 15 grade-bearing credit requirement.

Research credits are discussed below under concentration area requirements.

**IV. Forming a Committee:** You will, in consultation with your advisor, propose a committee(s) that will oversee your studies and comprehensive examination, and your thesis or project research. *You may elect to have a separate committee for each function.* The advisor presides over the committee(s), except during the oral comprehensive examination and the Thesis Defense Examination. For these exams, a graduate faculty member from outside the Rubenstein School will serve as chair. The committee should be formed, and convened at least once, during the first year of your program. Your committee should be structured as follows:

- Your advisor must be from inside the Rubenstein School **and** a member of the Graduate Faculty;
- The defense Chair must be from outside the Rubenstein School **and** a member of the Graduate Faculty;
- One additional member must be from the University of Vermont faculty;

The University of Vermont Graduate Catalogue outlines committee requirements for M.S. students under the General Requirements for the Master of Science. Final approval of your committee is the responsibility of the Rubenstein School Graduate Program Coordinator.

**V. Graduate Student Symposium at the Rubenstein School of Environment and Natural Resources:** You are required to present a progress report on your research during the second year of study at the annual Graduate Research Symposium, usually held in October.

**VI. Thesis and Project Proposal:** You must write a thesis or project proposal to establish the scope and content of the research project you intend to pursue. This proposal is a scholarly contribution to knowledge in your area of specialization. Your proposal will, at a minimum, describe the appropriate scientific and professional literature in your field, present the research question(s) you seek to answer, identify your research methods, and define and explain the contribution to the field that you intend to achieve.

1. The Studies/Thesis Committee will review and may provide feedback on your proposal;
2. Your advisor and studies committee must be notified if a significant deviation in the proposed research occurs.

**VII. Comprehensive Examination:** All Master of Science students must successfully complete a written comprehensive examination. The purpose of this examination is to provide you with the opportunity to demonstrate your depth and breadth of knowledge. The Studies/Thesis Committee is responsible for the preparation and administration of the examination. You should plan to take it within the first 3 semesters of enrollment at the Rubenstein School. The faculty in several areas of concentration established additional requirements. These are indicated in the appropriate sections that follow.

## **A. Written Exam**

**1. Conducting the Exam** The chair of the committee, in consultation with you and the committee members, shall specify the format of the written portion of the comprehensive examination.

In no instance will the exam period be less than two days or more than seven. The committee members will specify whether you will have access to outside materials such as books, lecture notes, articles, reading notes, etc., to develop your responses. In order to encourage succinct and focused writing, committee members are encouraged to specify a maximum page length for answers to each question.

**2. Suggested Guidelines for Written Comprehensive Exams** (may be adjusted by the committee ahead of the exams with the student informed of any changes from this format)

- a) Primary advisor will collect the questions from each committee member
- b) Primary advisor will provide the student one set of questions per day (day defined as 8-12 hours)
- c) Graduate student will send the answer(s) to the full committee at the end of each day
- d) Written exam will occur within one week

**3. Grading of the Exam** Each subject area will be graded *pass* or *fail* by the examiner(s) who wrote the question(s). Questions not graded within 10 days following the exam will be assumed to have been passed. If they do not meet expectations, the committee member will inform the committee and the student. The student will address the concern(s) in writing with a deadline provided by the committee. All areas must be successfully completed in order to pass the written portion of the exams.

You may repeat a part of the written exam that you have failed, but only once. The second exam will address only the areas you previously failed. It must take place within six months of the date of the initial exam. If the repeat exam is failed again you may file an appeal with the Graduate Standards Committee, who will make a recommendation to the dean. The dean will issue a determination regarding your status in the program.

## **B. Oral Exam**

For those concentrations requiring an oral exam, the oral exam will focus on the subject areas from the written exam, particularly any weak areas. The oral exam, when applicable, will follow within one month of satisfactory completion of written exam. The underlying intent is an opportunity to provide clarity to weak areas of the written portion of the exam.

Therefore, questions are limited to the subject areas originally designated and seek to discern if you have the knowledge that is essential to understand information in your field of study.

## **VIII. Master's Defense Presentation and Examination:**

- A. Defense Presentation:** You will present your research in a seminar open to the public. You will provide an announcement to the Rubenstein School Graduate Student Services Specialist, which will include an abstract and the names of your committee members at least two weeks in advance of the seminar. Members of your Committee will attend.
- B. Defense Examination:** The defense tests the quality and originality of your research, your independence of thought, and your ability to synthesize and interpret data. The defense concerns principles and historic perspectives, as well as discussion of your results and conclusions. Examiners often pursue lines of thought and argument based on the data and concepts that have contributed to your research and the critical evaluation you have made of it. You should be aware that any area that you failed during the comprehensive examination will be a focal point during the Defense Examination.

While this is generally a closed exam, any Rubenstein School Graduate Faculty member may attend, providing that both you and your advisor are given one day's notice.

### **1. Conduct of the Examination**

The Chair will preside over the examination. The recommended length of the examination is one to three hours.

Once questioning has been completed, you will be excused and an initial straw vote will be taken, followed by discussion. The final voting may be oral. However, at the request of any committee member, this vote may be by secret ballot. Each member of the committee (including the Chair) votes whether you have passed or failed. If there is more than one vote for failure you do not pass the exam. You will be informed verbally of the result as soon as it is reached. Even if you pass, you may be required to make changes in your thesis before it is signed in its final form.

If you fail the examination, you may retake the exam once. This exam must occur within six months of the first one. If you fail the second exam, you may file an appeal following procedures found in the Students' Rights and Responsibilities section of the Graduate Catalogue.

## **IX . Project or Thesis Options:**

### **1) Thesis (Residential Research-Based Programs)**

In addition to the general requirements for a M.S. in Natural Resources, you, as a residential student in a *research/thesis-based program* must complete 6 to 15 M.S.

thesis research credits (NR 391), propose, and defend your thesis.

## **2) Project - Residential Professional Programs**

In addition to the general requirements for a M.S. in Natural Resources, you, as a residential student in *a project-based program* must complete 3 to 6 M.S. project research credits (NR 392), propose, and defend your project.

See:

<http://catalogue.uvm.edu/graduate/degreerequirements/requirementsforthemastersdegree/>

<https://www.uvm.edu/graduate/resources>

for information on the proposal and defense forms and format.

## **Concentration Area Program Requirements**

In addition to the general requirements for the Master of Science in Natural Resources listed above, the faculty has established **specific obligations in several areas of concentration**, as follows:

### **Aquatic Ecology and Watershed Science:**

- 1) As part of your 30 credits required for the M.S., you will enroll in at least 12 credits of course work in the aquatic and watershed sciences, or in related fields as approved by your studies committee;
- 2) Either you or your committee may request an oral exam to address any questions that arise from the written exam
- 3) In this area of concentration you must pursue a research-based thesis.

### **Environment, Society, and Public Affairs:**

- 1) You will enroll in three courses in content-related subject matter chosen from an approved list and acceptable to your studies committee. At least two of these courses should be offerings within Natural Resources, Environmental Studies, or Parks, Recreation and Tourism;
- 2) A course in methods/tools, chosen in consultation with, and approval from your advisor and your studies committee;
- 3) A course in natural or physical science relating to your program of study (this may be waived if you have a science-related undergraduate degree);
- 4) Six thesis research credits (NR 391) or three to six project research credits (NR 392).

### **Environmental Thought and Culture:**

- 1) You must enroll in a conceptually integrated curriculum of course work that consists of at least 15 credits, and is approved by your studies committee;
- 2) It is strongly recommended that you enroll in NR 385: Environmental Thought and Culture (2 credits). However, other appropriate courses may be substituted;
- 3) You will need to complete between six and nine credits of your M.S. research thesis credits (NR 391) or three to six credits of project research credits (NR 392).

**Forest and Wildlife Sciences:**

- 1) Your comprehensive examination will include an oral component;
- 2) In this concentration you are required to pursue a research-based thesis;
- 3) You must complete between six and nine M.S. research credits (NR 391).

**Dual Degree with Vermont Law School:**

A Dual Degree Program is offered jointly with Vermont Law School’s Environmental Law Center. This program confers both the Master of Studies in Environmental Law and the M.S. in Natural Resources. You must meet each school’s degree requirements, including required courses and thesis preparation. However, nine credits may be transferred between programs and used to fulfill both degrees; thus you may earn both degrees in the Dual Degree Program with a total of 42 credits. For the M.S. degree, you may select any of the areas of concentration described above.

**Non-Concentration Option:**

You may also choose to pursue interdisciplinary topics not covered in these concentrations. You are required to meet all Rubenstein School requirements, plus any additional requirements that may be determined by your Studies/Thesis Committee.

**X. Suggested Schedule for Completion of the M.S. Degree Program:** Many factors influence the timing of each individual’s program. The table illustrates progress of a full-time M.S. student in the Rubenstein School. The schedule reflects the general expectations of the Graduate Standards Committee and the Rubenstein School Graduate faculty.

**A. Schedule of Benchmarks and Expectations**

Semester Evaluation	1st	2nd	3rd	4th
You exceed expectations	You are meeting expectations and you have completed your proposal	You are meeting expectations and you have * presented research at a scholarly conference and * completed your comprehensive exam(s)	You are meeting expectations and you have * submitted a scholarly work to a peer-reviewed journal	You are meeting expectations and * your scholarly work has been accepted or published in a peer-reviewed journal
You meet expectations	You have displayed consistent satisfactory, timely, and professional completion of:  * IDP * NR 306	You have displayed consistent satisfactory, timely, and professional completion of:  * TA and/or RA duties * course work described in your	You have displayed consistent satisfactory, timely, and professional completion of:  * TA and/or RA duties * course work	You have displayed consistent satisfactory, timely, and professional completion of:

	<ul style="list-style-type: none"> <li>* NR 395: AE,E&amp;S</li> <li>* TA and/or RA duties</li> <li>* your program of study plan</li> <li>* conduct an initial meeting with Master's committee</li> </ul>	<ul style="list-style-type: none"> <li>program of study plan</li> <li>* the draft of your research proposal to present to your committee for input</li> </ul>	<ul style="list-style-type: none"> <li>* The Graduate Research Symposium</li> <li>* comprehensive exam(s)</li> <li>* your research proposal</li> </ul>	<ul style="list-style-type: none"> <li>* TA and/or RA duties</li> <li>* your Thesis Seminar and Defense</li> </ul>
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**B. Evidence of Completion of Requirements** Evidence that you have met requirements, as defined above in their descriptions, shall be provided to the Graduate Standards Committee. This evidence should be submitted through the Rubenstein School Graduate Student Services Specialist.

**C. Time Limits** The Graduate Catalogue outlines University requirements for completion of M.S. degree programs. The University allows you five years to complete your M.S. degree. However, full-time M.S. students in the Rubenstein School are encouraged to complete all their degree requirements within two years of enrollment.

**D. Review of Progress** Each year, the Graduate Standards Committee reviews the progress of all M.S. students in the Rubenstein School. The intent of the review is to provide you with feedback to help you complete your degree in a timely fashion. The Graduate Standards Committee reviews progress based on the Benchmarks and Expectations table above, as well as performance in coursework, where you are expected to maintain a GPA > 3.0. If you fall significantly behind schedule or are not maintaining a GPA > 3.0, your advisor will be contacted by the Graduate Standards Committee. You should know that:

1. If your cumulative GPA falls below 3.0 you will be placed on academic probation.
2. If you are lagging in completing the requirements according to the established schedule, your advisor will receive a notice from the Graduate Standards Committee, with a copy to you. This communication will urge that you meet with your advisor to discuss how to complete the requirements and act as quickly as possible to correct the situation.
3. If a second year elapses and any previously unmet requirements are still delinquent, you will receive a second letter, with copies to your advisor and the dean, informing all parties that you are being placed on probation.
4. If you continue in arrears after a third period, the Graduate Standards Committee will send a third letter, which will go to the dean of the School, with copies to you and your advisor, and this letter will recommend deactivation. The dean of the school shall notify you and your advisor of the decision within four weeks, and shall notify the Graduate College regarding any recommendations for deactivation.

Should extenuating circumstances arise, the Graduate Standards Committee will entertain requests for waivers, exceptions, and variances to these General Guidelines at any stage. You and your advisor should make all such requests jointly.

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