

## Prerequisite Policy

The prerequisite policy below applies to students who were admitted/matriculated in fall 2020 – fall 2022.

The purpose of prerequisite requirements is to ensure that students are adequately prepared for their graduate-level courses in the Master of Environmental Management (MEM) and Master of Forestry (MF) professional degree programs. It is important that students complete their prerequisite coursework prior to the start of the program. See Program Area specific guidance in the section below for more information on this topic.

## Matriculation/Enrollment Expectations/Graduation Requirement

Students may **not** matriculate with more than one required prerequisite deficiency. Once the student confirms their intent to enroll, their transcript is reviewed for prerequisite requirements for the program area to which they are admitted. **We strongly urge students to complete their prerequisite coursework prior to matriculation.** Students who matriculate with one required prerequisite deficiency should plan to complete the prerequisite course in their first year of study, preferably in the fall semester. Keep in mind, students lacking a prerequisite may be unable to take graduate courses in the recommended sequence and may find it difficult to graduate within the standard two years of study. Students cannot waive nor test out of prerequisite requirements. Successful completion of required prerequisite coursework is a graduation requirement.

## Prerequisites by Program Area

View the [key topics](#) in a standard college level course for each prerequisite course.

### *Required Courses*

- **Calculus:** All program areas require calculus
- **Statistics:** All program areas require statistics
- **Microeconomics:** Business of Environment-MEM, Coastal Environmental Management-MEM, Environmental Economics and Policy-MEM, Energy and Environment-MEM, and Master of Forestry
- **Chemistry:** Ecotoxicology and Environmental Health-MEM
- **Principles of Ecology:** Ecosystem Science and Conservation-MEM and Master of Forestry

### *Recommended Courses*

- **Microeconomics:** Ecosystem Science and Conservation-MEM and Water Resources Management-MEM
- **Organic Chemistry:** Ecotoxicology and Environmental Health-MEM
- **Physics:** Water Resources Management-MEM
- **Chemistry:** Water Resources Management-MEM
- **Principles of Ecology:** Ecotoxicology and Environmental Health-MEM

## Course Options

The prerequisite policy below applies to students admitted in fall 2020 – fall 2022.

Students may fulfill prerequisite requirements by demonstrating successful completion of at least one of the following options for each required prerequisite. While highly recommended, students may choose whether or not to complete prerequisite courses recommended for their program area of study.

1. **Traditional/standard college-level course:** Complete a college level course at any accredited college or university (including community, technical or junior college); for graded credit and a minimum grade of C- earned (a Passing (P) or Satisfactory (S) grade) is also acceptable; and submit an official transcript to demonstrate successful completion.
2. **Coursera/MOOC/Open Course Ware:** Students may satisfy prerequisite requirements by providing a **certificate of completion** at the conclusion of a course taken through Coursera, MOOC or Open Course Ware. If the student is unable to provide a certificate of completion, then a copy of the complete grade history report must be submitted at the end of the course. The student must submit a complete list of all final grades (including all individual modules) as a PDF (see the “Grades” section within the course portal). Then, the student should [upload the certificate and/or grade report](#) in the transcript drop box. **Proof of completion must include the student’s name.**

[Duke University](#) offers chemistry and statistics courses at no cost to current Duke students; non-Duke Coursera courses are at the student’s expense. Search for course options that are covered by [Duke Coursera](#). **\*IMPORTANT:** NetID login is required to take the statistics and chemistry Coursera courses at Duke. [Login here and then click on Go to Coursera at Duke](#). Below is the list of Duke and non-Duke options:

- [Calculus Part I](#) + [Calculus Part II](#) (both courses are **required** to demonstrate completion)
  - [Evolution and Ecology](#) + [Ecology: Eco Dynamics and Conservation](#) (both courses are **required** to demonstrate completion)
  - [Microeconomics](#)
  - [Statistics with R at Duke\\*](#)
  - [Chemistry at Duke\\* \(Intro to Chemistry: Reactions and Ratios\)](#) + [Chemistry at Duke\\* Intro to Chemistry: Structures and Solutions](#) (both sections are recommended)
3. **Advanced Placement (AP) or International Baccalaureate (IB):** We will accept advanced placement (AP) or International Baccalaureate (IB) courses if the student earns college credit for the course(s) from their undergraduate institution. College credit must be clearly documented on the official undergraduate transcript. In the absence of the appropriate documentation on the official undergraduate transcript, we will accept an official letter from the institution’s Registrar’s Office ([sent directly to our office](#)), which clearly confirms the student earned college credit for the advanced placement course(s); the letter may not be sent by the applicant or student.
  4. **Distance Learning Courses:** Students may fulfill prerequisites at any accredited college or university. Students wishing to enroll in a distance learning course (i.e., online), in order to fulfill a prerequisite, are encouraged to seek prior approval to make sure the course is appropriate to fulfill the prerequisite requirement. Send an email to [nsoe-registrar@duke.edu](mailto:nsoe-registrar@duke.edu) with the name of the institution, course title, course number, credit value, dates of the course and the link to the online course details. The Nicholas School maintains a short list of Pre-Approved distance learning courses (for required prerequisites only). To request the list of Pre-Approved Distance Learning Courses, send an email to [nsoe-registrar@duke.edu](mailto:nsoe-registrar@duke.edu).

## All Program Areas

We strongly urge all students, regardless of their program area, to complete all prerequisite courses prior to the start of the program. Although students are permitted to matriculate with one required prerequisite deficiency, students lacking a prerequisite may be unable to take courses in their program area's recommended sequence and may find it difficult to graduate within the standard two years of study. Students who matriculate with one required prerequisite deficiency should plan to complete the prerequisite course in their first year of study, preferably in the fall semester. In addition to successful completion of prerequisite coursework, the Nicholas School administers diagnostic exams in calculus and statistics prior to the start of the program. All students must show proof of successful completion of their prerequisite coursework and earn passing scores on the calculus and statistics diagnostic exams in order to graduate. Information on diagnostic exams is outlined below.

Courses taken after matriculation to satisfy a prerequisite do not count towards the credits required for the MEM or MF professional degree. Successful completion of graduate-level courses in the MEM and MF program does not eliminate a prerequisite requirement. Students who fail to complete their prerequisite coursework by the end of the first year of study are at risk of being dismissed from the program. Note: students admitted to the Cooperative College 3-2 program may not matriculate with any prerequisite deficiencies.

## Program Area Specific Guidance

### Business and Environment

The Business and Environment program area has required prerequisite courses in calculus, statistics, and microeconomics. All incoming students should complete their prerequisite courses prior to the start of the program. Should you need to start the program missing one required prerequisite, we recommend that course be statistics. Students who matriculate with one required prerequisite deficiency should plan to complete the prerequisite course in their first year of study, preferably in the fall semester.

The following graduate courses are required and are generally taken in the first fall semester:

- Resource and Environmental Economics I ENVIRON 520 and Resource and Environmental Economics II ENVIRON 521: required prerequisites in calculus and microeconomics and a passing score on the calculus diagnostic exam
- Financial Foundations for Environmental Managers ENVIRON 796: prerequisite course in microeconomics is required

### Coastal Environmental Management

The Coastal Environmental Management program area has required prerequisite courses in calculus, statistics, and microeconomics. All incoming students should complete their prerequisite courses prior to the start of the program. Should you need to start the program missing one required prerequisite, we recommend that course be statistics. Students who matriculate with one required prerequisite deficiency should plan to complete the prerequisite course in their first year of study, preferably in the fall semester.

The following graduate courses are required and are generally taken in the first fall semester:

- Resource and Environmental Economics I ENVIRON 520 and Resource and Environmental Economics II ENVIRON 521: required prerequisites in calculus and microeconomics and a passing score on the calculus diagnostic exam

The two-part environmental economics course sequence is taught only in the fall semester on main campus (Durham) and is not available at the Marine Lab, Beaufort. Any CEM student not prepared to take ENVIRON 520 and ENVIRON 521 in their first fall semester will be required to take this course sequence in their second fall semester and that would affect the student's ability to study at the Marine

Lab in the fall of their second year. Of course, CEMs are not required to spend two semesters at the Marine Lab during their second year, but most students in the CEM program tend to take advantage of this opportunity.

Although Applied Statistical Modeling for Environmental Management ENVIRON 710 is not required for the Coastal and Environmental Management program area, this course is highly recommended and regularly taken by CEMs. In order to enroll, the student must submit proof of completion of the statistics prerequisite and earn a passing score on the statistics diagnostic exam. This course is taught in Durham only.

## Ecosystem Science and Conservation

The Ecosystem Science and Conservation program area has required prerequisite courses in calculus, statistics, and principles of ecology – as well as a recommended prerequisite in microeconomics. Students are strongly urged to complete all required and recommended prerequisites prior to matriculating. Students who matriculate with one required prerequisite deficiency should plan to complete the prerequisite course in their first year of study, preferably in the fall semester.

The following graduate course is required:

- Applied Statistical Modeling for Environmental Management ENVIRON 710: required prerequisite in statistics and a passing score on the statistics diagnostic exam; ESC students should be prepared to take this course in the spring semester of their first year.

Although not required core courses, the following courses tend to be of interest to students in the ESC program area in the first fall semester:

- Landscape Ecology ENVIRON 714: prerequisites in ecology and statistics. ESC students generally take this course in their first fall semester. Therefore, it is important that students matriculate with the principles of ecology and statistics prerequisites already completed. ENVIRON 714 is highly recommended but not required for ESC.
- Resource and Environmental Economics I ENVIRON 520 and Resource and Environmental Economics II ENVIRON 521 (*note: ENVIRON 635 and ENVIRON 680 are alternatives to ENVIRON 521*): required prerequisites in calculus and microeconomics and a passing score on the calculus diagnostic exam. It is not uncommon for ESC students to wait to take the two-part graduate environmental economics sequence in their second fall semester.

## Ecotoxicology and Environmental Health

The Ecotoxicology and Environmental Health program area has required prerequisite courses in calculus, statistics, and chemistry – as well as recommended prerequisites in ecology and organic chemistry. Although principles of ecology and organic chemistry are not required prerequisites, these prerequisites are strongly recommended and frequently used in EEH coursework. All incoming students should complete their prerequisite courses prior to the start of the program. Should you need to start the program missing one required prerequisite, we recommend that course be calculus. Students who matriculate with one required prerequisite deficiency should plan to complete the prerequisite course in their first year of study, preferably in the fall semester.

The following graduate courses are required and are generally taken in the fall semester:

- Environmental Toxicology ENVIRON 501: required prerequisites in biology and organic chemistry
- Applied Statistical Modeling for Environmental Management ENVIRON 710: required prerequisite in statistics and a passing score on the statistics diagnostic exam

Recommended Core Course:

- Chemical Fate of Organic Compounds ENVIRON 540: required prerequisites in chemistry and organic chemistry, typically taught in the fall semester

## Energy and Environment

The Energy and Environment program area has required prerequisites in calculus, statistics and microeconomics. It is important that all three prerequisites be completed prior to start of the program. Students who matriculate with one required prerequisite deficiency should plan to complete the prerequisite course in their first year of study, preferably in the fall semester.

The following graduate courses are required and are generally taken in the first fall semester.

- Resource and Environmental Economics I ENVIRON 520 and Energy Economics and Policy ENVIRON 635: required prerequisites in calculus and microeconomics and a passing score on the calculus diagnostic exam
- Applied Statistical Modeling for Environmental Management ENVIRON 710: required prerequisite in statistics and a passing score on the statistics diagnostic exam

## Environmental Economics and Policy

The Environmental Economics and Policy program area has required prerequisites in calculus, statistics, and microeconomics. It is important that all three prerequisites be completed prior to start of the program. Students who matriculate with one required prerequisite deficiency should plan to complete the prerequisite course in their first year of study, preferably in the fall semester.

The following graduate courses are required and are generally taken in the first fall semester.

- Resource and Environmental Economics I ENVIRON 520 and Resource and Environmental Economics II ENVIRON 521: required prerequisites in calculus and microeconomics and a passing score on the calculus diagnostic exam
- Applied Statistical Modeling for Environmental Management ENVIRON 710: required prerequisite in statistics and a passing score on the statistics diagnostic exam

## Water Resources Management

The Water Resources Management program area has required prerequisite courses in calculus and statistics – as well as recommended prerequisites in chemistry, physics, and microeconomics (or a general economics course with an emphasis in microeconomics). Students are strongly urged to complete all required and recommended prerequisites prior to matriculating. Students who matriculate with one required prerequisite deficiency should plan to complete the prerequisite course in their first year of study, preferably in the fall semester.

It is particularly important that students have strong facility with math concepts and skills as these will underlie many courses, whether natural science or social science courses.

The following courses tend to be of interest to students in the WRM program area:

- Applied Statistical Modeling for Environmental Management ENVIRON 710: required prerequisite in statistics and a passing score on the statistics diagnostic exam
- Resource and Environmental Economics I ENVIRON 520 and Resource and Environmental Economics II ENVIRON 521 (*note: ENVIRON 635 and ENVIRON 680 are alternatives to ENVIRON 521*): required prerequisites in calculus and microeconomics and a passing score on the calculus diagnostic exam
- Financial Foundations for Environmental Managers ENVIRON 796: required prerequisite in economics
- Landscape Ecology ENVIRON 714: prerequisites in ecology and statistics
- Environmental Toxicology ENVIRON 501: prerequisites in organic chemistry and biology

In addition to the courses above, there are several **core courses in the WRM program area** that have strongly recommended prerequisite courses in calculus, physics, and chemistry, and we find that

students without the prerequisites struggle.

- Hydrology for Environmental Management ENVIRON 732/ECS 723: physics and calculus or statistics are strongly recommended
- Water Quality and Health ECS 524: chemistry is strongly recommended
- Stream Ecology ENVIRON 744: principles of ecology and chemistry are recommended

## Master of Forestry

We strongly urge students pursuing the Master of Forestry degree to complete all of their prerequisites prior to matriculating. This includes prerequisite courses in calculus, statistics, microeconomics, and principles of ecology. Should the student need to start the program missing one required prerequisite, we recommend that be either calculus or microeconomics. Students who matriculate with one required prerequisite deficiency should plan to complete the prerequisite course in their first year of study, preferably in the fall semester.

Given the recommended course sequencing for the Master of Forestry degree, it is important that students matriculate with prerequisite courses in statistics and principles of ecology already completed. We expect students to enroll in graduate courses that require these two prerequisites in their first-year study e.g., ENVIRON 710 (Applied Statistical Modeling for Environmental Management) and ENVIRON 503 (Forest Ecosystems), ENVIRON 701 (Forest Measurements) and ENVIRON 731 (Dendrology). Keep in mind, passing scores on the calculus and statistics diagnostic exams are also required in addition to successful completion of prerequisite coursework.

## Diagnostic Exams

The Nicholas School administers diagnostic exams in calculus and statistics. All students are expected to take and pass the diagnostic exams (regardless of the program area). Students must submit proof of successful completion of the calculus and statistics prerequisites *prior* to taking the diagnostic exams. We encourage students to spend time [reviewing calculus and statistics](#) prior to the exams. Although we want students to do well on the diagnostic exams, please do not stress about these tests in advance. The exams are intended to assess where students are in these subjects at the time that they matriculate in the program and to ensure that students are prepared for graduate level courses requiring calculus and statistics as prerequisites. Students cannot take the diagnostic exams to waive a prerequisite requirement.

## Notification of Enrollment

Students who plan to matriculate in the fall should provide [notification of enrollment in their prerequisite course\(s\)](#) no later than **June 15**.

## Transcript Submission

Students may submit [official transcripts, degree certificates, course certificates and grade reports](#) at the link above or if the undergraduate or non-degree institution uses eSCRIP-SAFE International (or similar transcript service) for the delivery of official electronic transcripts, please ask the university registrar to forward the official transcript to [nsoe-registrar@duke.edu](mailto:nsoe-registrar@duke.edu). If the original transcript is not in English, the student must also provide a certified English translation along with the original transcript.

## Quick Links

- [Challenge a Deficiency >](#)
- [Diagnostic Exams >](#)
- [Distance Learning/Pre-Approved List >](#)
- [Program-specific Prerequisites >](#)

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## Questions

Questions about prerequisites or diagnostic exams should be sent to [nsoe-registrar@duke.edu](mailto:nsoe-registrar@duke.edu).