
Professional Graduate Degree Programs



The Nicholas School of the Environment and Earth Sciences offers two professional graduate degrees, the Master of Environmental Management and the Master of Forestry, which prepare students for careers in a wide variety of employment settings, including government agencies, private industry, nonprofit organizations and international organizations.

The Distinction between Professional and Doctoral Degrees

Professional graduate programs such as the Master of Environmental Management (M.E.M.) and Master of Forestry (M.F.) differ from traditional M.S./Ph.D. programs both in terms of the career goals of students and in terms of curricula. The M.E.M. and M.F. are normally considered “terminal” degrees, equipping graduates to begin or advance in a professional career related to environmental policy and management. Most M.E.M./M.F. graduates hold management and staff positions in which they are expected to compile, analyze and interpret natural and social science information and then use it to formulate a plan for action.

The M.E.M./M.F. curriculum reflects these employment goals. The emphasis is on coursework that provides a strong scientific and analytical foundation for management-oriented decision making. A Master’s Project supplements the coursework by allowing students to demonstrate their organizational and analytical skills in solving an environmental management problem in their areas of specialization.

Although the M.E.M./M.F. degrees are not designed as precursors to the Ph.D. degree, students who later choose to enter Ph.D. programs suffer no disadvantage from taking a professional master’s degree first.

Students desiring to concentrate their study and research within a well-defined subject area and planning for careers primarily in university teaching and research are urged to pursue the doctoral (Ph.D) degree. The Ph.D. emphasizes disciplinary research, and all Nicholas School faculty train doctoral students at Duke. Prospective Ph.D. students should consult the chapter in this Bulletin on doctoral degrees as well as the Bulletin of the Graduate School of Duke University (<http://registrar.duke.edu/bulletins/Graduate>). For more detailed information, visit the Graduate School Web site at <http://www.gradschool.duke.edu>.

Professional Masters Degrees

The Master of Environmental Management degree is designed to help students develop expertise in the management of the natural environment for human use with minimum deterioration of ecosystem stability. M.E.M. degree candidates choose one of these programs of study:

- Coastal Environmental Management
- Conservation Science and Policy
- Ecosystem Science and Management
- Environmental Economics and Policy
- Environmental Health and Security
- Global Environmental Change
- Water and Air Resources

An eighth program of study, Forest Resource Management, is available to students seeking the Master of Forestry (M.F.) degree.

Students may use electives and additional coursework to accommodate a second emphasis in one of the other program concentrations offered within the school.

Program Requirements

Each of the Nicholas School's professional programs requires the completion of 48 units of graduate credit. These units are distributed among a set of core courses required by each program, quantitative courses, electives, a Master's Project and seminars relevant to the program's objectives. More specific information about requirements for any one of the programs may be obtained from the Office of Enrollment Services. With advisor approval, students may count up to 6 credits of course work at the 100-level with a grade of at least G toward their degree requirements.

Prerequisites

All programs require a semester each of college calculus and applied statistics as prerequisites. Most programs require additional prerequisites, as described later in this chapter.

Major (Core) Courses

Each program requires a series of core courses that provide essential background training relevant to the program's objectives, as outlined in the program descriptions below.

Quantitative and Analytical Courses

All programs require six to 12 units of courses stressing quantitative and analytical methods.

Elective Courses

Elective courses are available to give the student flexibility in developing his or her course of study. Most programs use some of these courses to add depth to the major area of study or to develop a second area of expertise. Students who select the Environmental Economics and Policy program must use at least three of their elective courses to broaden their understanding of environmental science.

Master's Project

A Master's Project constituting four to six units of credit is required. These projects take the form of individual or small-group analysis of a problem in natural resource management, offering alternative solutions for better management of the environment. The results of the Master's Project are presented orally in a symposium held near the end of each semester and in a written document that is presented to the student's advisor and the Dean before graduation.

Seminars

All students are required to participate in seminars in their program area for one unit of credit. These seminars prepare students for the Master's Project.

Certificates

Certificate programs allow students to achieve an area of special expertise by completing a series of courses and projects. At present, the Nicholas School offers certificates in Geospatial Analysis, in the National Environmental Policy Act (offered via participation in intensive courses) and in Energy and Environment. The new Energy and Environment certificate recognizes that one of the special problems facing the world is the need to supply new, alternative, and renewable energy sources while minimizing damage to the environment.

In addition, Nicholas School students sometimes complete certificate programs in other schools or departments, such as the International Development Policy or Health Policy certificates offered by the Terry Sanford Institute for Public Policy.

Experiential Learning

To complement academic coursework, the Nicholas School also offers experiential learning in environmental management. This includes short courses, field trips and

practical learning experiences guided by practicing environmental professionals from the energy industry, from forestry and from conservation. These practical learning experiences tie more traditional classroom learning to the work environments that professional degree students will be entering.

Professional Skills Development

In addition to regular courses and seminars, the Nicholas School of the Environment and Earth Sciences offers a series of optional lectures and workshops to prepare students for professional employment. Topics for these modules include field and laboratory techniques, communications skills, project organization and management and teamwork skills. The Director of Professional Studies makes the schedule and detailed information concerning the series available to students during the academic year. Students may receive a small amount of credit for participation in these modules. In addition, a modest matching fund is available to help students defray the cost of skills training offered outside the school, such as the Certificate in Nonprofit Management offered by the Duke Continuing Education program.

Professional Programs

Coastal Environmental Management

The Coastal Environmental Management (CEM) program provides a scientifically rigorous understanding of coastal environments, considered at the global, national and local level, of physical and biological processes controlling those environments, and of the human behaviors and policies that affect and are affected by those environments and processes. The specific aim of the program is to train scientifically informed professionals to fill coastal policy and management, research or advocacy positions in federal, state and local agencies, industry, consulting firms and nonprofit organizations. The program also provides a firm foundation for future Ph.D. studies.

The first year of the program is usually spent on the Durham campus fulfilling the required courses in areas such as natural resource economics, general environmental policy, ecology, oceanography and methodological skills. The second year is usually spent in residence at the Duke University Marine Laboratory in Beaufort, taking courses in the natural, social and policy sciences specific to the coastal and marine environment, and focusing on the production of the Master's Project. The Marine Laboratory provides an ideal setting for the study of natural and social scientific phenomena associated with coastal and marine environments, and for interaction with coastal and marine constituencies and policy makers in the application of science to policy. Potentials for participation in the policy-making process are emphasized throughout the program.

Prerequisites: calculus, statistics, introductory economics including microeconomics.

Core Courses: ENVIRON 276, Marine Policy; ENVIRON 270, Resource and Environmental Economics; one additional policy course; one ecology course and two ocean science courses.

Conservation Science and Policy

The defining feature of the Conservation Science and Policy (CSM) track is a two-dimensional structure, consisting of a Concentration Area and an Approach. The Concentration Area defines the level or scale of a problem in conservation biology, for instance the preservation of an endangered species or the preservation and management of a critical ecosystem. The Approach defines a methodological focus and tools that are used to solve a particular problem in conservation biology, generally the problem defined in the Concentration Area. Examples of approaches include field-based methods with an emphasis on natural history, geospatial analysis (emphasizing geographic information systems and remote sensing), community-based methods

involving stakeholder participation, and modeling (statistical and simulation). In combination, these choices define a career track and a planning matrix for coursework and research experience for the M.E.M. degree.

Prerequisites: calculus, statistics, principles of ecology.

Core courses: Coursework in this program is designed individually for each student, with the help of his/her advisor. The core includes ENVIRON 203, Conservation Biology; two natural science courses and one social science course related to conservation. For the Approach, four courses are required, including one in statistics, two courses from one of the focal methodologies identified above and one from a complementary methodology.

Ecosystem Science and Management

The Ecosystem Science and Management program (ESM) considers the management of large areas of terrestrial, aquatic and marine ecosystems for sustainable ecosystem function (e.g., productivity, water quality) in the face of human demands.

As in the program in Conservation Science and Policy, the defining feature of this program is a two-dimensional structure, consisting of a Concentration Area and an Approach. The Concentration defines a topical area, usually a particular ecosystem (forests, wetlands, coastal/marine or tropics). The Approach defines a methodological focus and tools that are used to explore a problem in the topical area. Examples of approaches include field-based methods with an emphasis on natural history, geospatial analysis (emphasizing geographic information systems and remote sensing), community-based methods involving stakeholder participation, and modeling (statistical and simulation). In combination, these choices define a career track and a planning matrix for coursework and research experience for the M.E.M. degree.

Students interested in forest ecosystems have a choice of (a) a forest concentration under Ecosystem Science and Management leading to the M.E.M. degree; (b) the Forest Resource Management program leading to the M.F. degree (see below); or (c) a combination of the two, leading to both degrees in five semesters (see information on the joint M.E.M./M.F. degree later in this chapter).

Prerequisites: calculus, statistics, principles of ecology.

Core courses: The core includes ENVIRON 320, Ecosystem Management; two natural science courses in the chosen ecosystem and a related social science course. For the Approach, four courses are required, including one in statistics, two in one of the focal methodologies described above and one in a complementary methodology.

Environmental Economics and Policy

The Environmental Economics and Policy (EEP) program is designed to train environmental decision makers and those who advise them. The program emphasizes the basic methods needed by the professional for analyzing existing policies and for testing the possible outcome of new environmental and resource policies being considered by public and private agencies. The program is highly analytical and is oriented toward the analysis of contemporary national and international environmental problems.

Decision making in natural resource and environmental policy requires mastery of three broad areas of knowledge: the basic sciences pertaining to a natural resource or an environmental phenomenon; the relevant disciplines in the social sciences; and the quantitative methods required for using knowledge from the physical, biological and social sciences to arrive at a decision. Students choose one of three areas of emphasis: economics, policy and institutions or business and the environment. Four major elective courses and three quantitative courses support the area of emphasis. Three science courses develop a resource area for applying social science analysis, e.g., conservation or water resources.

Prerequisites: calculus, statistics, introductory economics including microeconomics.

Core Courses. ENVIRON, 270 Resource and Environmental Economics; ENVIRON 274, Resource and Environmental Policy and one of the following: LAW 235, Environmental Law or ENVIRON 281, Resource and Environmental Law.

Environmental Health and Security

The program in Environmental Health and Security (EHS) trains students to manage human-dominated environments to minimize threats to human health and safety, to recognize and minimize the release of toxic substances to the environment and to anticipate threats to natural ecosystems that may stem from direct or inadvertent human actions. Students receive special training in environmental chemistry, environmental genomics and environmental epidemiology. A special emphasis is placed on risk assessment. Some students may pursue special studies of the built environment and geological hazards that may underlie biotic activity in human-dominated systems (earthquakes, extreme weather events, and catastrophic failures of engineered structures). The goal of the program is to produce scientists and environmental managers with a solid foundation in the principles underlying pollutant fates, hazards and impacts, as well as a firm grasp of modern approaches for evaluating the effects of specific instances of environmental contamination and catastrophes and for making management decisions based on quantitative analysis.

Prerequisites: calculus, statistics, biology including human or animal physiology, chemistry, organic chemistry.

Core courses: ENVIRON 160, Environmental Chemistry and Toxicology; ENVIRON 298.02, Environmental Epidemiology; ENVIRON 246, Survey of Environmental and Occupational Health; one additional course in ecology or global change; three courses in specialization/focus, with at least one course emphasizing human health and one emphasizing environmental health.

Global Environmental Change

The program in Global Environmental Change (GEC) trains students to understand human impacts on the Earth that transcend national boundaries, yielding long-term changes in the physical properties of the planet (e.g., climate change), its chemistry (e.g., nitrogen pollution) and the health of its biota (e.g., fisheries decline). A special emphasis is given to an examination of past changes in the Earth's condition to provide context for understanding current and future human impacts. Emphasis is also placed on analytical methods that can be applied to environmental problems that are manifest in a variety of spatial and temporal scales. Students couple study of basic earth system science with an understanding and analysis of national and international policy options that might be brought to bear on these global environmental problems. Thus, at least four courses must be completed from a list of approved classes in global environmental policy and law. The objective is to train policy analysts who will work at the highest levels of government and the corporate world to help address global environmental problems and provide innovative solutions to them.

Prerequisites: calculus, statistics; earth science and biology recommended.

Core courses: EOS 300, Earth Processes and Environment; EOS 211 The Climate System; EOS 255, Climate Change, two other courses in basic global change science, three courses in the area of analytic methods and tools, and four courses in management.

Water and Air Resources

The program in Water and Air Resources (WAR) provides students with a scientific understanding of the basic physical, chemical and biological processes affecting these natural resources and trains students to apply this understanding, together with quantitative, analytical and statistical techniques, to the management of air and water resources. Emphasis is placed on understanding a wide range of problems such as the effects of land resource management on water quality, hydrologic and climate

processes, aquatic and atmospheric chemistry, air pollution and its effect on aquatic and terrestrial systems and the regulatory framework within which these resources are managed.

Coursework and other training in the program cover basic physical and chemical processes relevant to hydrologic and atmospheric sciences, methods of quantitative and statistical analysis and methods of management and decision making. The basic processes emphasized are watershed hydrology; stream and lake water quality; aquatic and atmospheric chemistry; general meteorology and climatology; and the origins, transport and fate of aquatic and atmospheric pollutants. Quantitative analysis techniques include statistical and numerical methods, probabilistic and deterministic models and optimization and simulation methods. These courses are integrated with classes in economic and policy analysis.

Graduates of the program have the skills to become analysts or consultants for private industry and public agencies concerned with understanding the management and protection of water and air resources. These employers include government agencies, public utilities, consulting firms, and hydrologic, atmospheric or environmental research centers.

Prerequisites: calculus, statistics, introductory physics and chemistry

Core Courses: At least one course from among those approved in each of four areas: physical sciences, chemical sciences, biological or ecological sciences and social sciences; three additional courses in an area of concentration (e.g., water, air) and three courses in quantitative and analytical methods related to resource management.

Forest Resource Management

The Forest Resource Management (FRM) program integrates forest ecology and management within an educational program that emphasizes related environmental fields. This program leads to the receipt of the Master of Forestry degree (M.F.). The program provides knowledge of basic forest ecology and ecological management of forests for a variety of uses, including nontraditional forest products and conservation. This distinctive approach derives from a core set of forestry courses— in sampling, measurement, dendrology, silviculture and ecology— combined with electives in resource-oriented courses (such as soils, hydrology, air and water quality, biological conservation and physiology); statistical analysis and modeling; and resource economics and policy. The Duke Forest serves as an outdoor laboratory in many of these courses.

The focus of the Forest Resource Management program is problem solving in complex ecological and management systems. Within the program, students may acquire skills that qualify them for positions in industry, conservation organizations, government agencies, nonprofit organizations and other groups involved with the use and conservation of forests. The M.F. program is accredited by the Society of American Foresters, which is recognized by the Council on Postsecondary Accreditation and the Department of Education as the accrediting body for forestry educational programs in the United States. Students can develop additional credentials for employment by jointly completing the M.F. degree and a Master of Environmental Management degree in the Nicholas School of the Environment and Earth Sciences or other concurrent degree programs (i.e., Business, Law, or Public Policy) at Duke, as described in the section that follows.

Students who have an undergraduate degree in forestry may earn a Master of Forestry degree with only 30 units of credit. To be admitted with the one-year degree option, the student must have received a Bachelor of Science in Forestry degree from an accredited forestry school. The student must spend a minimum of two semesters in residence at Duke.

Prerequisites: statistics, calculus, principles of ecology, introductory economics including microeconomics.

Core Courses. ENVIRON 201, Forest Resources Field Skills; ENVIRON 206, Forest Vegetation Sampling; ENVIRON 213, Forest Ecosystems; ENVIRON 205L, Silviculture; ENVIRON 320, Forest Ecosystem Management; forest or resource economics; policy or administration and professional ethics.

Special Tracks for Practicing Professionals

The Nicholas School of the Environment and Earth Sciences offers two options for environmental professionals who wish to receive a professional degree. The **Senior Professional Program (SPP)** allows students to receive a Master of Environmental Management or Master of Forestry degree in a compressed program with at least one semester spent on campus. SPP students choose one of the program tracks available to all traditional M.E.M and M.F. students. The **Duke Environmental Leadership Master of Environmental Management (DEL-MEM)** is for mid-career professionals with leadership potential. The DEL-MEM program has a major online component and thus requires much less time on campus, making it feasible for professionals to pursue the degree while staying employed full-time.

Senior Professional Program

The Senior Professional Program is a special master's degree track for candidates with at least five years of work experience in an environmental field. Those who qualify may be admitted to the Nicholas School to complete a Master of Environmental Management or Master of Forestry degree with reduced credit and residency requirements.

These professional degree candidates must spend at least one semester at Duke enrolled in regular graduate-level courses. Up to 15 credit hours are taken during this semester. The remaining credit hours required for a M.E.M. or M.F. degree (usually 15 additional credits) may be earned through an additional semester in residence or through continuing education intensive courses, independent study and the Master's Project. Candidates have five years from the date of acceptance to complete the credit requirements.

The student's advisor— upon evaluation of the individual's previous education, work experience and career goals— establishes specific degree requirements for students in the Senior Professional Program, including required courses and the number of academic units necessary to complete the degree. At least 30 credit hours are required.

Duke Environmental Leadership— Master of Environmental Management

The Nicholas School offers the Duke Environmental Leadership Master of Environmental Management (DEL-MEM) degree, an on-campus and online program that focuses on interdisciplinary themes, strategic approaches to environmental management, communication and effective leadership. This innovative program is designed for mid-career professionals with a minimum of five years experience, who may find it difficult to leave an existing job and family in order to pursue an M.E.M. degree in residence at Duke.

Curriculum

The DEL-MEM is a two-year, 30-credit program that combines distance-learning courses and weeklong intensive on-campus sessions. These on-campus sessions will give participants an opportunity to experience the campus environment, meet fellow M.E.M. students and interact directly with faculty. Including orientation, students are required to come to the Duke campus five times during their studies. Between campus visits, and to complement the face-to-face sessions, students will complete individual

and group coursework online through chat sessions, online meetings, bulletin boards, videoconferences, conference calls and other advanced interactive technologies.

The program components include: a one-week orientation course on the Duke campus; modular courses in ecosystems science and management, economics of environmental management, environmental policy and law and program management for environmental professionals; elective modules developed around more specialized themes; a three-day environmental leadership module in Washington, DC, involving prominent leaders from the private, public and not-for-profit sectors; and a Master's Project related to the student's current employment.

Admissions

Admission to the DEL-MEM program is based on undergraduate performance, GRE scores and work experience. Five years of relevant work experience is a prerequisite for the program. In addition, heavy emphasis is put on evidence of leadership potential and an established background in fields directly related to the environment. Up to four DEL credits taken prior to admission may be counted toward the DEL-MEM program.

Financial Aid

Financial aid is available through various student loan programs to United States citizens and permanent residents. Students requesting financial assistance must complete the Free Application for Federal Student Aid (FAFSA). Private loans are also offered through various vendors.

Contact Information

For more information about the DEL-MEM program, contact the DEL Program Office at 919-613-8082 or E-mail del@env.duke.edu. Or visit the Web site at <http://www.nicholas.duke.edu/del>.

The Cooperative College (3-2) Program

The Cooperative College Program (3-2 program) allows qualified students to receive an undergraduate and master's degree by spending three years at a cooperating undergraduate institution and two years at the Nicholas School of the Environment and Earth Sciences. Students can pursue either of two degrees, the Master of Environmental Management (M.E.M.) or Master of Forestry (M.F.). *See chapter 2, Undergraduate Degree Programs, for more details about the program. Application procedures are described in Chapter 4, Academic Information for Professional Degree Students.*

Concurrent Degrees

Master of Environmental Management and Master of Forestry

With careful planning of their curriculum, students can earn both the M.E.M. and the M.F. degrees concurrently. The requirements for earning both degrees are as follows:

1. The student must qualify for either the M.E.M. or M.F. degree by earning 48 units of credit under the requirements set forth in the previous section.
2. For the second degree, the student must complete an additional 24 units of study that, in combination with courses taken for the first degree, meet the substance of the requirements for the second degree. Two additional semesters in residence are normally required, although, with careful planning, the student may complete both professional degrees in a total of five semesters.
3. One Master's Project should combine the two areas of study.

Determination of eligibility for the degrees will be made on an individual basis and will consider the educational background and objectives of the student.

Master of Business Administration

The techniques of management science are applied with increasing frequency in the management of natural resources, and they are also now commonly used in the analysis of environmental problems. To integrate training in these management techniques into the curriculum more effectively, the Nicholas School of the Environment and Earth Sciences has developed a cooperative arrangement with Duke's Fuqua School of Business. At least three years of study are required to earn the combined degrees of Master of Environmental Management/Master of Business Administration or Master of Forestry/Master of Business Administration. At least 36 units of credit within the Nicholas School are required to receive the M.E.M. or M.F. degree; these include 4 to 6 units for the Master's Project. A typical program sequence would involve spending the first year in the Nicholas School followed by a year in the Fuqua School of Business, and concluding with the final year of combined work in both schools. However, this sequence may be adjusted at a student's request. Students electing to pursue the M.E.M. jointly with the M.B.A. must complete requirements for both degrees before either degree will be awarded.

These concurrent degrees stress analytical reasoning and the basic methodologies of management science, while providing the student with knowledge of current problems in the natural resource industries, industrial ecology and sustainable business practices. The study of managerial economics, resource economics, organization theory and management, resource management, the legal environment and the public policy aspects of resource industries form a substantial component of each degree.

Because of the academic demands of these degrees, those entering without the necessary analytical skills or life science background may be required to take additional work beyond that specified.

Students who wish to undertake both the Master of Environmental Management or Master of Forestry and Master of Business Administration degrees must apply to and be accepted by each of the respective schools. For information on the Master of Business Administration degree, the prospective student should write to the Fuqua School of Business, Admissions Office, Duke University, Box 90104, Durham, NC 27708-0104, or visit the Fuqua Web site at <http://www.fuqua.duke.edu>.

Master of Public Policy

As issues concerning natural resources and the environment have become increasingly significant to the nation, a corresponding need has developed for well-trained policy analysts who can provide timely and appropriate information and analysis to resource policy makers. Students interested in a professional degree in environmental policy at Duke have three options: (1) the Master of Environmental Management (M.E.M.) degree in the Environmental Economics and Policy program of the Nicholas School, described above; (2) a Master of Public Policy (M.P.P.) degree from the Terry Sanford Institute of Public Policy; or (3) joint M.E.M./M.P.P. degrees from the Nicholas School and the Sanford Institute. Doctoral candidates in the Nicholas School are also eligible to undertake the Master of Public Policy.

The joint M.E.M./M.P.P. degree provides training in the politics and economics of resource and environmental policy-making. Emphasis is placed on understanding the social and political forces involved, developing facility with quantitative and logical methods of forecasting and evaluating policy consequences. Knowledge of the uses and limitations of policy analysis and an awareness of the ethical dimensions of policy choice are also stressed.

The concurrent degree takes a minimum of two and one-half years to complete. The first year is typically devoted to study in the Terry Sanford Institute of Public Policy, and the second year and a half are spent in the Nicholas School of the Environment and Earth Sciences. At least 36 units of credit within the Nicholas School are required to receive the M.E.M. or M.F. degree. A summer internship with a resource or

environmental agency, or with a related legislative, judicial or interest group, is required for the policy degree. Students in this joint degree program complete both a Master's Project for the policy degree and a separate Master's Project for the M.E.M. or M.F. degree. Students electing to pursue the M.E.M. jointly with the M.P.P. must complete requirements for both degrees before either degree will be awarded.

Students must apply to and be accepted by both the Nicholas School of the Environment and Earth Sciences and the Duke University Graduate School. For detailed information on the Public Policy degree, write to the Director of Graduate Studies, Terry Sanford Institute of Public Policy, Duke University, Box 90243, Durham, NC 27708-0243, or visit the Sanford Institute Web site at <http://www.pubpol.duke.edu>.

Juris Doctor in Environmental Law and Juris Doctor/M.A. Option

Environmental and natural resource issues increasingly require legal and regulatory knowledge for resolution. There is a growing demand for resource managers and scientists who have legal credentials; similarly, attorneys are facing more situations in which knowledge of natural resources and the environmental sciences is critical to the resolution of disputes. To satisfy these demands, the Nicholas School of the Environment and Earth Sciences and the School of Law have developed a cooperative arrangement to allow pursuit of concurrent Master of Environmental Management and Juris Doctor degrees.

For students in the concurrent M.E.M./J.D. program, the Nicholas School requires 36 units of credit, including a Master's Project. The School of Law requires 84 units of law credit, 12 units of which may be satisfied through courses taken in the Nicholas School.

Typically, a student will complete the first year of study in the School of Law and the second in the Nicholas School of the Environment and Earth Sciences. During the third and fourth years, the student will take a combination of courses in both schools. M.E.M./J.D. candidates must apply to and be accepted by both the Nicholas School of the Environment and Earth Sciences and the School of Law. Students electing to pursue the M.E.M. jointly with the J.D. must complete requirements for both degrees before either degree will be awarded.

Students must apply to and be accepted by both the Nicholas School of the Environment and Earth Sciences and the School of Law. For information on the law degree, prospective students should write to the School of Law, Admissions Office, Duke University, Box 90393, Durham, NC 27708-0393, or visit the Law School Web site at <http://www.law.duke.edu>.

Additionally, the Duke University School of Law offers a unique program whereby students enrolled in the Law School may concurrently pursue a Master of Arts degree in a variety of subject areas, including environmental studies. Students who intend to focus their careers on law but who wish to supplement their legal education with continuing study of the environment may find this program of interest. Students pursuing the M.A. are governed by the regulations of the Graduate School but take their coursework alongside professional degree students.

Applicants to this program must file an application with the Law School at <http://law.duke.edu/admis>. The application is also reviewed by faculty in the Nicholas School, and admission is offered by the Law School and the Graduate School.

The J.D./M.A. program requires that students begin their studies in the summer and continue through the following six academic semesters. During that time students will earn 30 units of credit in the Graduate School, of which 24 must be graded, and 72 units in the School of Law. M.A. students complete an oral comprehensive examination in the Nicholas School but are not required to complete a Master's Project. Further information is available from the Director of Graduate Studies of the Nicholas School.

Master of Arts in Teaching

Over the last several decades, international concern for protecting our ecosystems has led to an increased need to educate citizens on the challenges facing our environment. Numerous education programs are now aimed at K-12 students as well as the general population. Environmental education is of increasing importance to those who prepare to teach, particularly in the sciences. Duke's concurrent degree program between the Nicholas School of the Environment and Earth Sciences and the Graduate School allows students to meet this challenge by earning a Master of Environmental Management (M.E.M.) and a Master of Arts in Teaching (M.A.T.) degree.

In this concurrent degree program, to earn the M.E.M. degree students must complete 36 units of credit in the Nicholas School, including a Master's Project. For the M.A.T. degree, students will complete 30 units of credit, including a full-year teaching internship and all requirements for the North Carolina teaching licensure in comprehensive science at the high school level. Competencies required by the state will be met through undergraduate courses taken prior to admission to Duke, science courses taken as part of the M.A.T. or courses taken as part of the M.E.M.

Students will normally enroll in the M.A.T. program during the summer and then complete an academic year of student teaching and M.A.T. coursework prior to enrolling in the M.E.M. program for three semesters. Students electing to pursue the M.E.M. jointly with the M.A.T. must complete requirements for both degrees before either degree will be awarded.

Students must apply to and be accepted by both the Nicholas School of the Environment and Earth Sciences and the Graduate School of Duke University, citing the Master of Arts in Teaching program. Students admitted to the M.A.T. program in comprehensive science must hold an undergraduate degree in one of the natural sciences with significant undergraduate preparation in biology and chemistry. Organic chemistry is required.

Questions concerning the M.A.T. degree should be addressed to the Director of the Master of Arts in Teaching Program, Duke University, Box 90093, Durham, NC 27708-0093; telephone (919) 684-4353. Internet: <http://www.duke.edu/web/MAT>.

Concurrent Degrees with Other Universities

With the special permission of the faculty Education Committee and the dean of the Nicholas School of the Environment and Earth Sciences, students are permitted, on an individual basis, to establish concurrent degree programs with certified graduate degree programs either within or outside of Duke University. In the past, students have designed such programs with law schools, business schools and graduate engineering programs. As with the other concurrent degrees, the student must be enrolled in the Master of Environmental Management or Master of Forestry degree program for at least 36 units of credit and normally be in residence for three semesters.

To receive permission to pursue a specially designed concurrent degree, the student must show an official acceptance from another certified graduate degree program. For additional information concerning special concurrent degrees, applicants should consult the Office of Enrollment Services.