TWO-YEAR MASTER’S DEGREE PROGRAMS

The School of Forestry & Environmental Studies offers four two-year master’s degrees: the professionally oriented Master of Environmental Management (M.E.M.) and the Master of Forestry (M.F.), and the research-oriented Master of Environmental Science (M.E.Sc.) and Master of Forestry Science (M.F.S.). The master’s degree programs vary in their level of prescription, but all are sufficiently flexible to accommodate the diverse academic backgrounds, professional experiences, and career aspirations of a large and vibrant student body. The program curricula draw from more than 200 courses taught by more than fifty F&ES faculty, as well as from courses taught elsewhere at Yale. Each student’s course of study is customized through consultation with a faculty adviser who guides the student’s learning experience from the first week at Yale until graduation. The master’s degree programs require a minimum of two years in residence, 48 credits of course work at Yale, a summer internship or research experience, and completion of the Training Modules in Technical Skills prior to the student’s first term (see below).

MASTER OF ENVIRONMENTAL MANAGEMENT

The Master of Environmental Management curriculum draws from course work in the natural and social sciences and focuses on the complex relationships among science, management, and policy. The purpose of the program is to provide students with an in-depth understanding of natural and social systems that can be applied to environmental and natural resource problem solving in a policy or management context. In addition to course work, students are expected to hone their capacities as leaders and managers through summer internships, professional skills courses, and other opportunities.

The M.E.M. curriculum requires students to focus on an area of specialization, while still offering the flexibility to tailor their course programming in a way that exposes them to other disciplines and subject areas. This structure assures that students develop both depth and breadth in their course study. Students can choose from more than 100 courses offered by F&ES faculty and have access to an even larger number of courses from across Yale University. Beginning with fall 2018 enrollees, all M.E.M. students take the fall Perspectives course (F&ES 601), demonstrate interdisciplinary conversancy through four half-term Basic Knowledge courses (F&ES 511, F&ES 512, F&ES 521, and F&ES 522), and complete a Capstone. They round out their experience with general electives and a selection of at least four of eight Professional Skills Modules.

Specializations are designed to ensure that students obtain sufficient depth in their chosen area of study. The specializations are:

1. Business and the Environment
2. Climate Change Science and Management
3. Ecosystem and Land Conservation and Management
4. Energy and the Environment
5. Environmental Policy Analysis
6. Industrial Ecology and Green Chemistry
7. Nature and Society
8. Water Resources Science and Management

Specialization requirements account for 18 of the 48 total credits required for the M.E.M. degree, made up of two core courses and four electives, and it is possible to add a second specialization. Students have until the end of their second term of study to choose their specialization, which will be listed on their transcript upon completion.

MASTER OF FORESTRY

The Master of Forestry program trains professionals for the protection, management, and restoration of native forests and woodlands and associated human-made forest ecosystems (urban trees, agroforests, plantations); and for mediating and resolving the conflicting values of society that concern forests and associated ecosystems. Since 1900, the Master of Forestry program has provided leadership in the education of professional foresters. It is the oldest continuing forestry program in the Western Hemisphere. Almost all the early foresters in North America had their roots at Yale, including Aldo Leopold, M.F. ’09, and nine of the first twelve chiefs of the USDA Forest Service.

Master of Forestry graduates have pursued a variety of professional opportunities in forestry. Most start as general practitioners in management and with experience move through management to become policy makers and organizers. Some graduates use the degree as preparation for advanced study in doctoral programs.

The broad objective of the two-year M.F. program is realized by requiring a multidisciplinary suite of formal course work coupled with a progressive synthesis of knowledge in a significant project. Course work is supplemented through an array of local, regional, national, and international field trips to witness the practice of forestry in diverse settings. Real-world professional experience is provided through the Yale Forest and summer internships at a wide variety of resource management and policy organizations. Opportunities to engage in discussion with forest leaders are provided through workshops, meetings with visiting speakers of national and international repute, and involvement in the School’s programs such as the Global Institute of Sustainable Forestry, the Forests Dialogue, the Tropical Resources Institute, and the Urban Resources Initiative.
The teaching objectives of the M.F. program are (1) to integrate knowledge about forests, natural resources, and society to form a sound basis for making management decisions; (2) to provide electives and other educational opportunities to specialize by focusing on a particular land use or management issue concerning forest ecosystem management; and (3) to provide opportunities for independent problem solving, critical thinking, and self-development. Students take a mixture of natural, social, and quantitative science courses, culminating in the second year with courses in integrated resource management and leadership. Flexibility in the choice of courses within the core curriculum as well as choice of electives allows each student to tailor the program to a desired specialization. Sample specializations have included community development and social forestry; protected areas management; extension and education; consulting forestry; business; watershed health and restoration; tropical forest management; agroforestry; and industrial forest management.

The Master of Forestry degree is accredited by the Society of American Foresters (SAF). A minimum of two full years in residence and sixteen full courses (48 credits) is required for completion of this program.

**MASTER OF ENVIRONMENTAL SCIENCE/MASTER OF FOREST SCIENCE**

The Master of Environmental Science and the Master of Forest Science degree programs are expressly designed for students wishing to conduct research that contributes to basic and applied knowledge in any of the fields taught at F&ES, such as ecology, hydrology, social ecology, economics, industrial ecology, or policy. These degrees are intended to facilitate a deeper disciplinary focus than the Management degrees, while allowing students the flexibility in course election that will allow them to meet diverse educational goals. The Master of Environmental Science is intended for students who wish to work broadly in different fields of environmental science. The Master of Forest Science is intended for students who wish to work in forest-related topics.

The course of study for both degrees includes formalized School-level training in the philosophy and practice of science. Training is provided through key courses in combination with extended project research and disciplinary and nondisciplinary electives. The scientific research required for this degree will be conducted in close collaboration with an F&ES faculty adviser. Therefore students must have a commitment from a faculty adviser before being admitted to these degree programs. The Master of Environmental Science and Master of Forest Science programs require the student to produce a “scholarly product.” This product may take the form of a traditional master’s thesis or a paper(s) submitted to a refereed journal.

**TRAINING MODULES IN TECHNICAL SKILLS (MODS)**

All incoming master’s students participate in three weeks of summer modules, which introduce the students to a basic understanding of field data, the basis for all environmental science and policy. MODs have three goals: (1) introduce basic systems analysis techniques, the foundation for all environmental science, management, and policy, using three local ecosystems; (2) build F&ES community spirit; and (3) introduce new students to the landscape they will be living, studying, and working in for the next few years. MODs take place in three settings: the urban environment of New Haven, the Yale Myers Forest in northeast Connecticut, and the Great Mountain Forest in northwestern Connecticut.

These modules are required of all first-year master’s students enrolled in two-year programs, the M.E.M. Fifth Year program, and the one-year midcareer degree program. Course work is primarily in the field and covers three technical areas:

**Ecosystem analysis** Understanding the process of data collection, analysis, and interpretation is important for all natural resource professionals, from field researchers to resource managers and policy makers. The objective of this module is to improve the ability to evaluate ecosystem data by introducing/reviewing principles of and techniques for quantifying natural resources.

**Urban** The goal of this module is to acquaint students with field skills for characterizing and understanding urban ecosystems. It is designed to complement the ecosystem analysis module, which uses an ecosystem framework and examines largely undisturbed systems. In contrast, the urban module explicitly considers how the actions of humans and the existence of the built environment alter ecosystem structure and function.

**Reading the landscape** The goal of this module is to provide a basic understanding of how to interpret landscapes, taking into consideration land use history, land management, ecological conditions, and geological features, and how they have combined to shape the land and ecosystems today. Students are also introduced to the fundamentals of navigation, surveying, and map making, leading to an understanding of how to interpret various representations of spatial information.