

BACHELOR OF SCIENCE IN FOREST ECOSYSTEM SCIENCE

The [Forest Ecosystem Science](#) degree is based on a vision that combines professional competency in forest management skills with an enhanced understanding of ecological sciences. Students interested in this program typically are drawn to natural settings and environments, enjoy nature, and want to understand how forested ecosystems work. ESF provides a wide variety of opportunities to meet student needs utilizing 25,000 acres of forest lands as teaching laboratories. Internships with natural resource-based organizations in the business, public and nonprofit sectors provide additional hands-on experiences. Experiential field learning is combined with learning concepts and skills in the classroom and laboratory on ESF's Syracuse campus.

The undergraduate curriculum in forest ecosystem science consists of two broad categories of courses. The first category, general education, provides students with knowledge and skills that are useful and important for all educated persons regardless of their profession as well as preparation for advanced courses leading to a specific profession. The second category, professional courses, provides students with direct preparation for a career. The first two years of college usually focus on general education and the second two on the professional studies.

The FES program allows students to obtain the professional skills that employers look for in new employees and a deeper understanding of the scientific basis of those skills. These skills are developed through a combination of core courses focusing on biology, ecology, ecosystems, and management. The forest ecosystem science degree offers a wide variety of employment opportunities. Graduates work throughout the United States in public agencies, private industry, and for nonprofit organizations. They also are well prepared to enter graduate programs in management of forest and natural resources, ecological research, or other areas of applied forest biology.

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The educational program, leading to the professional Bachelor of Science degree in Forest Ecosystem Science, is accredited by the Society of American Foresters (SAF) under Forestry.

Lower Division Required Courses

APM 105

APM 210

EFB 101

EFB 102

EFB 103

EFB 104

ESF 200

EWP 190

EWP 290

FCH 150

FCH 151

FCH 152

FCH 153

FOR 132

FOR 207

FOR 232

FOR 332

FOR 360

EPH 101

AND

EPH 102

Upper Division Required Courses

EFB 336

ESF 300

FOR 304

FOR 313

FOR 322

FOR 323

FOR 334

FOR 345

FOR 465

FOR 492

FOR 493

Course	Codes*	Credits
Free Electives		14
General Education Course in one of the following categories: US History & Civic Engagement, The Arts, World History and Global Awareness, World Languages	G	3
General Education Course in Diversity, Equity, Inclusion and Social Justice	G	3

Directed Elective Courses

Students must choose four (4) courses from Biophysical Sciences directed elective area and three (3) courses from Management and Human Dimensions directed electives to meet graduation requirements. Courses that satisfy these requirements include the following (other courses may be substituted with an approved petition):

Biophysical Science Electives (chose at least 12 credits)

Biology courses

- EFB 307/308 Principles of Genetics with Lab
- EFB 311 Principles of Evolution
- EFB 325 Cell Biology

Ecosystems/Ecology courses

- EFB 320 General Ecology
- EFB 413 Introduction to Conservation Biology
- EFB 445 Plant Ecology and Global Change
- EFB 446 Ecology of Mosses
- EFB 523 Tropical Ecology
- FOR 338 Meteorology
- FOR 340 Watershed Hydrology

Forest Health Science and Protection courses

- EFB 303 Introductory Environmental Microbiology
- EFB 340 Forest and Shade Tree Pathology
- EFB 342 Fungal Diversity and Ecology
- EFB 345 Forest Health
- EFB 351 Forest Entomology
- EFB 352 Entomology
- EFB 439 Forest Health Monitoring
- EFB 440 Mycology
- EFB 554 Aquatic Entomology

Plant Biology/Science courses

- EFB 326 Plant Evolution, Diversification & Conservation
- EFB 327 Adirondack Flora (Summer course)
- EFB 337 Field Ethnobotany (Summer course)
- EFB 435 Flowering Plants: Diversity, Evolution and Sys.

Animal Biology/Science courses

- EFB 355 Invertebrate Zoology
- EFB 384 Field Herpetology (Summer course)
- EFB 385 Comparative Vertebrate Anatomy
- EFB 388 Ecology of Adirondack fishes (Summer course)
- EFB 424 Limnology: Study of Inland Waters
- EFB 462 Animal Physiology: Environmental and Ecol.
- EFB 480 Principles of Animal Behavior
- EFB 482 Ornithology
- EFB 483 Mammal Diversity
- EFB 484 Winter Ecology
- EFB 485 Herpetology
- EFB 486 Ichthyology
- EFB 491 Applied Wildlife Science
- EFB 493 Wildlife Habitats and Populations

Management and Human Dimensions (chose at least 9 credits)**Management courses**

- EFB 390 Wildlife Ecology and Management
- EFB 487 Fisheries Science and Management
- FOR 333 Natural Resources Managerial Economics
- FOR 370 Forest Mgt Planning and Decision Making
- FOR3 73 Sustainable Harvesting Practices
- FOR 442 Watershed Ecology and Management
- FOR 480 Urban Forestry
- FOR 481 Introduction to Arboriculture

Human Dimensions courses

- EST 366 Environmental Ethics
- EST 390 Social Processes and the Environment
- FOR 372 Fundamentals of Outdoor Recreation

Additional courses may be petitioned with support of your academic advisor.

Total Minimum Credits for Degree: 124

