MPS  APPLIED ECOLOGY

Rationale:
There is a need for individuals to have graduate training in the area of applied ecology, but many such individuals do not require the major research and thesis requirement of a traditional M.S. degree. These prospective MPS students include individuals who will work for environmental groups and consulting firms as well as municipalities and state and federal agencies. This option will also be particularly useful for secondary school teachers seeking permanent certification in New York State and students who have a major orientation in environmental policy, planning or law but wish to solidify their background in applied ecology. This MPS option will be distinctly beneficial to professionals returning for "retooling." The MPS option in Applied Ecology differs substantially from the M.S. degree in EFB with respect to the type of students, requirements and overall educational goals.

Requirements:
Incoming students will be introduced to the Applied Ecology Option and key topics in the field of applied ecology at a three-day orientation in August before beginning the Fall semester at one of the ESF field facilities (e.g., Cranberry Lake Biological Station, Thousand Island Biological Station, and Adirondack Ecological Center at the Huntington Wildlife Forest) with access to nearby aquatic and terrestrial sites including both natural and anthropogenically impacted systems.

Coursework requirements include a total of 15 credit hours selected in 5 of the 7 focus areas listed below, 2 credit hours of graduate seminars and additional 19 credit hours in graduate courses for a minimum of 36 credit hours.

Catalog Statement:

Applied Ecology Option: Designed for students who desire to solidify their background in applied ecology and professionals who would return for “retooling”; suitable for careers in environmental oversight, policy, planning, law, and education. This program begins with a 3-day orientation in August at one of the ESF field facilities. Coursework requirements include 3 credit hours each from 5 of the 7 focus areas, 2 credit hours in graduate seminars (EFB 797) and additional 19 credit hours of graduate coursework for a total of 36 credit hours.

Current List of Courses in 7 Focus Areas: One course each from 5 of the 7 areas for a total of 15 graduate credit hours (each course carries 3 credit hours except as noted)

(1) GIS tools (3 hours)
- EFB 519 GEOGRAPHIC MODELING
- ERE 550 INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS
- FOR 557 PRACTICAL VECTOR GIS
- FOR 558 ADVANCED TOPICS IN GIS

(2) Statistical tools (3 hours)
- APM 510 STATISTICAL ANALYSIS
- APM 620 ANALYSIS OF VARIANCE
- APM 625 INTRO/SAMPLING TECHNIQUES
- APM 630 REGRESSION ANALYSIS
- APM 635 MULTIVARIATE STAT METHOD
- APM 645 NONPARAMETRIC STATS&CAT DATA ANALYSES
(3) Specialty Tools (3 hours)

APM 500 INTRODUCTION TO COMPUTER PROGRAMMING FOR GRADUATE STUDENTS
APM 653 SIMULATION DESIGN AND ANALYSIS
EFB 601 MOLECULAR BIOLOGICAL TECHNIQUES
ERE 552 FUNDAMENTALS OF REMOTE SENSING
ERE 566 GLOBAL POSITIONING SYSTEMS I
ERE 645 HYDROLOGIC MODELING
FCH 515 METHODS OF ENVIRONMENTAL CHEMICAL ANALYSIS
FOR 546 FOREST SOIL GENESIS, CLASSIFICATION, AND MAPPING
FOR 635 FOREST SOILS AND THEIR ANALYSES
FOR 645 HYDROLOGICAL TECHNIQUES
EFB 625 PLANT BIOTECHNOLOGY
EFB 733 TECHNIQUES IN PLANT PHYSIOLOGY

(4) Ecosystem Ecology (3 hours)

EFB 516 ECOSYSTEMS
EFB 518 SYSTEMS ECOLOGY (4)
EFB 523 TROPICAL ECOLOGY
EFB 524 LIMNOLOGY
EFB 610 ECOLOGICAL BIOGEOCHEM
EFB 623 MARINE ECOLOGY (5)
EFB 644 BIOGEOGRAPHY (4)

(5) Organismal Ecology (3 hours)

EFB 505 MICROBIAL ECOLOGY
EFB 535 SYSTEMATIC BOTANY
EFB 542 FRESHWATER WETLAND ECOSYSTEMS
EFB 554 AQUATIC ENTOMOLOGY
EFB 628 MYCORRHIZAL ECOLOGY
EFB 640 MYCOLOGY
EFB 645 PLANT ECOLOGY
EFB 646 ECOLOGY OF MOSSES
EFB 662 ANIMAL PHYSIOL:ENVRN&ECOL
EFB 693 WILDLIFE HABITATS AND POPULATIONS (4)

(6) Human Dimensions in Ecology (3 hours)

APM 650 OPERATIONS RESEARCH
EFB 502 ECOLOGY AND MANAGEMENT OF INVASIVE SPECIES
EFB 513 ADIRONDACK FOREST ECOLOGY AND MANAGEMENT (2 – 3)
EFB 551 FOREST INSECT ECOLOGY AND MANAGEMENT
EFB 600 TOXIC HEALTH HAZARDS (4)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>EFB 611</td>
<td>TOPICS IN ENVIRONMENTAL TOXICOLOGY</td>
</tr>
<tr>
<td>EFB 687</td>
<td>FISHERIES SCIENCE AND MANAGEMENT</td>
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<tr>
<td>EFB 692</td>
<td>ECOL AND MGT OF WATERFOWL</td>
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<tr>
<td>EFB 693</td>
<td>WILDLIFE HABITATS AND POPULATIONS (4)</td>
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<td>ERE 506</td>
<td>HAZARDOUS WASTE MANAGEMENT</td>
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<tr>
<td>ERE 691</td>
<td>AIR POLLUTION ENGINEERING</td>
</tr>
<tr>
<td>FOR 533</td>
<td>MANAGERIAL ECONOMICS FOR ENVIRONMENTAL PROFESSIONALS</td>
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<tr>
<td>FOR 560</td>
<td>PRINCIPLES OF MANAGEMENT</td>
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<tr>
<td>FOR 630</td>
<td>AGROFORESTRY</td>
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<tr>
<td>FOR 665</td>
<td>NATURAL RESOURCES POLICY</td>
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<tr>
<td>FOR 670</td>
<td>RESOURCE AND ENVIRONMENTAL ECONOMICS</td>
</tr>
<tr>
<td>FOR 673</td>
<td>PLANNING AND MANAGEMENT OF OUTDOOR RECREATION AREAS</td>
</tr>
<tr>
<td>FOR 678</td>
<td>WILDERNESS AND WILDLANDS MANAGEMENT</td>
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<td>FOR 687</td>
<td>ENVIRONMENTAL LAW AND POLICY</td>
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<tr>
<td>FOR 688</td>
<td>NATURAL RESOURCES ADMINISTRATION LAW</td>
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<tr>
<td>FOR 753</td>
<td>ADVANCED NATURAL RESOURCE AND ENVIRONMENTAL POLICY</td>
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(7) **Communications in Ecology (3 hours)**

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<tr>
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<tr>
<td>EFB 616</td>
<td>INTRODUCTION TO ENVIRONMENTAL INTERPRETATION</td>
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<td>EFB 617</td>
<td>INTERPRETIVE DESIGN</td>
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