



# ESF Minor Curriculum Change Proposal Form

Committee on Curriculum - ESF Faculty Governance  
Office of Instruction & Graduate Studies

**Date:** January 15, 2023  
**Department:** Environmental Biology  
**Curriculum Title:** Conservation Biology

### For Minor Changes in existing curriculum (check all that apply):

- revised courses
- change in total cr. hrs.
- new course sequence
- new program objectives\*
- new courses added
- new accreditation/assessment requirements

\*See SUNY Guidelines

## 1. Rationale for Change

Please provide an explanatory narrative outlining the rationale for the change, and the impacts of this change on the learning outcomes of the curriculum:

This minor curriculum change is being conducted to:

- update General Education courses in relation to new SUNY Gen Ed guidelines;
- update catalog listing of directed electives; and
- replace the PHY 101 (Major Concepts of Physics) requirement with the new FOR110(Environmental Physics) course

### Required Courses

|         | Course   | Codes*            | Credits           |
|---------|--|-------------------|-------------------|
| APM 105 | Survey of Calculus and Its Applications I                                      | G                 | 4                 |
| APM 391 | Introduction to Probability and Statistics                                     | G                 | 3                 |
| XXX ### | <a href="#">Diversity, Equity, Inclusion, and Social Justice Gen Ed Course</a> | <a href="#">G</a> | <a href="#">3</a> |
| EFB 101 | General Biology I: Organismal Biology and Ecology                              | G                 | 3                 |
| EFB 102 | General Biology I Laboratory   | G                 | 1                 |
| EFB 103 | General Biology II: Cell Biology and Genetics                                  | G                 | 3                 |
| EFB 104 | General Biology II Laboratory  | G                 | 1                 |
| EFB 120 | The Global Environment and the Evolution of Human Society                      | G                 | 3                 |
| EFB 132 | Orientation Seminar: Environmental and Forest Biology                          |                   | 1                 |
| EFB 202 | Ecological Monitoring and Biodiversity Assessment                              |                   | 3                 |

|                          |   |   |              |
|--------------------------|---|---|--------------|
| EFB 210                  | Diversity of Life I   |   | 3            |
| EFB 211                  | Diversity of Life II  |   | 3            |
| EFB 307                  | Principles of Genetics  |   | 3            |
| EFB 308                  | Principles of Genetics Laboratory   |   | 1            |
| EFB 311                  | Principles of Evolution   |   | 3            |
| EFB 320                  | General Ecology   |   | 4            |
| EFB 370                  | Population Ecology and Management   |   | 3            |
| EFB 413                  | Introduction to Conservation Biology  |   | 3            |
| EFB 414                  | Senior Synthesis in Conservation Biology  |   | 3            |
| EFB 420<br>OR<br>EFB 498 | Internship in Environmental and Forest Biology<br>Research Problems in Environmental and Forest Biology |   | 4-53<br>4-53 |
| EWP 190                  | Writing and the Environment   | G | 3            |
| EWP 290                  | Research Writing and Humanities   | G | 3            |
| FCH 150                  | General Chemistry I   | G | 3            |
| FCH 151                  | General Chemistry Laboratory I  | G | 1            |
| FCH 152                  | General Chemistry II  | G | 3            |
| FCH 153                  | General Chemistry Laboratory II   | G | 1            |
| PHY 101                  | Major Concepts of Physics I   |   | 4            |
| FOR 110                  | Environmental Physics   |   | 3            |

### Electives

| Course   | Codes* | Credits |
|--|--------|---------|
| General Education Course in one two of the following categories: US History & Civic Engagement, American History, The Arts, World History and Global Awareness, World Languages, Western Civilization, Other World Civilizations, Foreign Language<br>General Education Course in two of the following categories: American History, The Arts, Western Civilization, Other World Civilizations, Foreign Language<br>General Education Course in two of the following categories: American History, The Arts, Western Civilization, Other World Civilizations, Foreign Language | G      | 36      |

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|                    |  |     |
|--------------------|--|-----|
| Directed Electives |  | 30  |
| Open Electives     |  | 224 |

### Directed Electives

To ensure that Conservation Biology undergraduates obtain both strength and breadth of knowledge, 30 elective credit hours must be distributed in a way that satisfies seven requirements (A-F, below).

#### A. Field Experience Elective

At least three elective credits from an approved field course in biology (in addition to the core field course, EFB 202). These credits ~~are~~ typically are obtained through an elective course at our Cranberry Lake Biological Station, an approved internship (EFB 420) or field trip course (EFB 500). Approved field courses from other institutions can also fulfill this requirement. No single class may be used to fulfill directed elective requirements of A and B.

#### B. Biodiversity Specialization (at least three courses from the following list)

The availability of courses that satisfy this requirement varies. The suggestions below are pre-approved courses that are typically taken - consult with your advisor or the curriculum coordinator about other possibilities. Many other courses can potentially substitute (by petition) for those listed. No single class may be used to fulfill directed elective requirements of A and B.

- EFB 303 Introductory Environmental Microbiology (4 cr.) F
- EFB 326 Plant Evolution, Diversification and Conservation (3 cr.) S
- [EFB 327 Adirondack Flora \(3 cr.\) CLBS](#)
- EFB 336 Dendrology (3 cr.) F
- EFB 340 Forest and Shade Tree Pathology (3 cr.) S
- EFB 342 Fungal Diversity and Ecology (3 cr.) CLBS
- [EFB 350 Microbial Consortia \(3 cr.\) S](#)
- EFB 351 Forest Entomology (3 cr.) F, ~~even-odd~~ years
- EFB 352 Entomology (3 cr.) F, ~~even-odd~~ years
- EFB 355 Invertebrate Zoology (4 cr.) S
- EFB 388 Ecology of Adirondack Fisheries (3 cr.) CLBS
- [EFB 428 Mycorrhizal Ecology \(3 cr.\) F, even years](#)
- EFB 435 Flowering Plants: Diversity, Evolution, and Systematics (3 cr.) F
- EFB 440 Mycology (3 cr.) F
- [EFB 441 Field Plant Pathology \(3 cr.\) CLBS](#)
- EFB 446 Ecology of Mosses (3 cr.) S
- EFB 453 Parasitology (3 cr.) F
- EFB 479 Field Ornithology (3 cr.) CLBS
- EFB 482 Ornithology (4 cr.) S
- EFB 483 Mammal Diversity (4 cr.) F
- EFB 485 Herpetology (3 cr.) F
- EFB 486 Ichthyology (3 cr.) S
- EFB 496 Wetland Plants & Communities of Adirondacks (3 cr.) CLBS

EFB 496 Flora of Central NY (3 cr.) Maymester  
EFB 554 Aquatic Entomology (3 cr.) F  
EFB 566 Systematic Entomology (3 cr.) S, even years

**C. Applied Conservation Biology (at least 6 credits)**

EFB 305 Indigenous Issues in the Environment (3 cr.) S  
EFB 390 Wildlife Ecology and Management (4 cr.) F  
EFB 423 Marine Ecology (4 cr.) S, even years  
EFB 424 Limnology (3 cr.) F  
EFB 438 Ecology and Management of Waterfowl (3 cr.) F  
EFB 444 Biodiversity and Geography of Nature (3 cr.) F even years  
EFB 449 Wetlands Habitat Management for Wildlife (3 cr.) S  
EFB 463 Ecotoxicology  
EFB 480 Animal Behavior (3 cr.) F  
EFB 487 Fisheries Science & Management (3 cr.) F  
EFB 493 Management of Wildlife Habitats & Populations (3 cr.) F  
EFB 502 Ecology and Management of Invasive Species (3 cr.) S  
EFB 504 Plant-Herbivore Interactions (3 cr.) F, odd years  
EFB 522 Ecology, Resources and Development (2 cr.) S  
EFB 542 Freshwater Wetland Ecosystems (3 cr.) S  
FOR 321 Forest Ecology and Silviculture (3 cr.) F  
FOR 332 Forest Ecology (3 cr.) F  
FOR 442 Watershed Ecology and Management (3 cr.) F  
FOR 496 Forest Management and Wildlife (3 cr.) S

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**D. Human Dimensions (at least 3 credits)**

EFB 404 Nat Hist Museums of Modern Sci (3 cr.) Maymester  
EST 353 Environ-Psychology Behavior, Change and the Environment (3 cr.) S  
EST 366 Attitudes, Values, & Env. (3 cr.) S  
EST 390 Social Processes and Environment (3 cr.) S  
EST 460 Land Use Law (3 cr.) S  
EWP 390 Intro to Literature of Nature (3 cr.) F  
FOR 312 Sociology/Natural Resources (3 cr.) S  
FOR 360 Principles of Management (3 cr.) F  
FOR 465 Natural Resources and Environ. Policy (3 cr.) F  
FOR 487 Environmental Law and Policy (3cr.) F  
FOR 489 Natural Resources Law and Policy (3cr.) S

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**E. Communications and Interpretation (at least 3 credits)**

EFB 342EST 370 Introduction to Personal Environmental Interpretation Methods (3 cr.) F  
EFB 417EST 471 Non-Personal Environmental Interpretation Methods (3 cr.) S  
EWP 220 Public Presentation Skills (3 cr.) F,S  
EWP 407 Writing for Environmental and Science Professionals (3 cr.) F,S  
EST 496 Advanced Interpretation & Certification (3 cr.) S, even years

**F. Technical Skills (at least 3 credits)**

BTC 401 Molecular Biol. Techniques (3 cr.) F  
BTC 425 Plant Biotechnology (3 cr.) S  
BTC 426 Plant Tissue Culture Methods (3 cr.) F  
EFB 518 System Ecology (4 cr.) F  
ERE 445 Hydrological Modeling (3 cr.) F  
ESF 300 Introduction to Geospatial Information Technologies (3 cr.) F,S  
ERE 563 Photogrammetry (3 cr.) S  
MCR 484 Scanning Electron Microscopy (3 cr.) F

MCR 485 Transmission Electron Microscopy (3 cr.) S  
MCR 585 Light Microscopy for Research Applications (3 cr.) S

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## 2. Institutional Impact:

### Changes from existing condition:

Anticipated Enrollment or Enrollment Change: none

Faculty or Staffing Requirements: none

Technology, Computing Resources, and Classroom Resource Demands: none

Change in Accreditation Requirements: none

Changes to Assessment Plan: none

Library Resource Requirements: none

## 3. Catalog Narrative:

Please attach to this proposal form a copy of the current catalog description in MS Word format, with revisions shown in "track changes".

Conservation biology is the application of science to conserve the earth's imperiled species and ecosystems.

The field is growing rapidly and ever increasing in importance in response to the biodiversity crisis, perhaps the most critical environmental issue of our time. Conservation biologists view all of nature's diversity as important and having inherent value. This diversity spans the biological hierarchy and includes variation at the level of genes, populations, communities, ecosystems, and biomes.

#### 4. Curriculum Transition Plan:

Please provide a narrative description of your plan for transitioning from your existing curriculum to the proposed new curriculum. Please provide specific dates for implementing curriculum changes, overlap periods where old and new curricula may exist simultaneously, and final phase out of old curricula. Please also include impacts and mitigating considerations for transfer students and students in mid-program during implementation, impacts of changes in semester delivery of existing courses, addition of new courses within a particular semester, etc.

Students enrolling in the Conservation Biology major beginning Fall 2023 will complete the new General Education requirements. Most students have already been enrolling in FOR296 to fulfill Physics requirements. The option will remain for students to enroll in PHY101 to complete the minimum physics requirement.

#### 5. Approval Signatures:

Signatures below, or attached letters, indicate that the affected departments, programs or units have been notified of this proposal and have had an opportunity to assess the impact of the proposal on their respective units. If departments did not respond to your notification, you may wish to document your effort to contact them.

##### Affected Academic Department(s) or Program(s):

|                      |                                |   |
|----------------------|--------------------------------|---|
| Department/Program 1 | Name of Chair/Program Director |   |
| Chair Signature      | Date                           | Or letter attached <input type="checkbox"/> |
| Department/Program 2 | Name of Chair/Program Director |   |
| Chair Signature      | Date                           | Or letter attached <input type="checkbox"/> |
| Department/Program 3 | Name of Chair/Program Director |   |
| Chair Signature      | Date                           | Or letter attached <input type="checkbox"/> |

*[If more/ess than three Departments/Programs, please add/delete lines as appropriate.]*

##### Other Units

|                  |      |   |
|------------------|------|---|
| Library Director | Date | Or letter attached <input type="checkbox"/> |
|------------------|------|---|

\_\_\_\_\_  
Computing and Network Services Date \_\_\_\_\_ Or letter attached

\_\_\_\_\_  
Physical Plant Date \_\_\_\_\_ Or letter attached

\_\_\_\_\_  
Forest Properties Date \_\_\_\_\_ Or letter attached

\_\_\_\_\_  
Environmental Health and Safety Date \_\_\_\_\_ Or letter attached

\_\_\_\_\_  
Admissions Date \_\_\_\_\_ Or letter attached

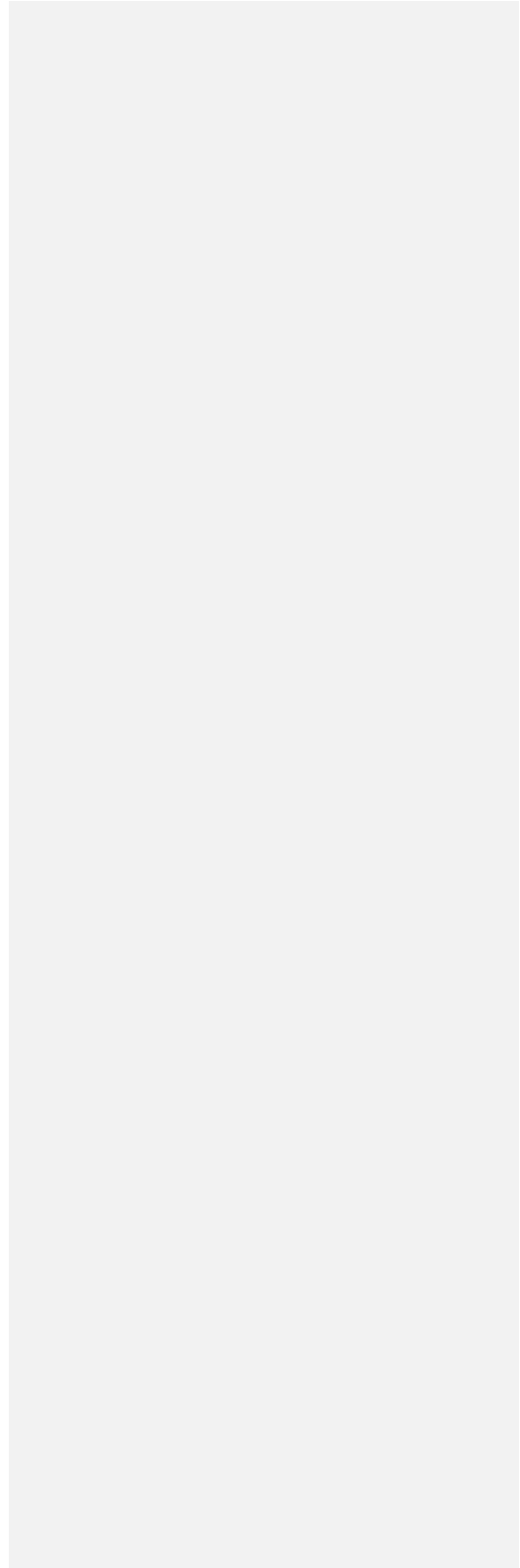
Other \_\_\_\_\_ Date \_\_\_\_\_ Or letter attached

Other \_\_\_\_\_ Date \_\_\_\_\_ Or letter attached

**Office of the Provost**

Signature below, or attached letter, indicates that the Provost either a) agrees that that there is no need for additional resources from the College; or b) indicates willingness to provide the extra support to the department.

\_\_\_\_\_  
Provost Signature Date \_\_\_\_\_ Or letter attached





## 6. Proposer Information and Department Chair Affirmation:

Contact Person:

Name: Donald Leopold \_\_\_\_\_ Department: Environmental Biology \_\_\_\_\_

Email: [djleopold@esf.edu](mailto:djleopold@esf.edu) \_\_\_\_\_ Phone: x6784 \_\_\_\_\_

This proposal has been reviewed and approved by the sponsoring Department. Affected departments have been notified and given the opportunity to provide feedback. Department resources are or will be made available to support this curriculum revision, or a plan is in place to meet the resource needs as identified in the Institutional Impacts section of this proposal (see Section 2, above) .

Name: \_\_\_\_\_ Date: \_\_\_\_\_  
Department Chair (or designated curriculum representative)

Signature: \_\_\_\_\_ Or letter attached   
Department Chair (or designated curriculum representative)

