Ecology and Evolutionary Biology Minor Requirements

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Why study Biology?
Biology as a discipline is connected to many aspects of our everyday lives. From development and disease, to the food we eat, to the environment around us, studying biology brings us a deeper understanding of the world around us and allows us to benefit society through medicine, agriculture and environmental stewardship. Biology is a rapidly advancing area as we learn more every day about biological concepts ranging from our cells to our planet. Mastering biology opens up diverse careers in health science (medicine, dentistry, public health), biotechnology and pharmaceutical sciences, biological research, environmental policy, conservation and wildlife biology, ecological monitoring, and farming.

Who should minor in Ecology and Evolutionary Biology?
The academic minor in Ecology and Evolutionary Biology trains biologists interested in the origins and complex interactions of the Earth’s biodiversity and ecosystems with both fundamental knowledge in these areas and the basic skills of scientific inquiry. The academic minor covers the material of the major to a lesser depth for students who wish to supplement a major in another area with additional biological expertise. The academic minor in Ecology and Evolutionary Biology is not recommended for students interested in graduate work in the biological sciences.

Exclusions: Students who elect an academic minor in Ecology and Evolutionary Biology may not elect the following majors: Biology; Biology, Health, and Society; General Biology; Plant Biology; Ecology and Evolutionary Biology; Ecology, Evolution, and Biodiversity; Microbiology; or Biochemistry. They also may not elect an academic minor in Biology or Plant Biology.

How do I declare?
Students interested in any major or minor in the biological sciences are encouraged to meet with an advisor to discuss their academic plans as soon as possible! Students should have completed the biology introductory sequence with a 2.0 or better and be in good academic standing. Make an advising appointment online through the Biology website: www.lsa.umich.edu/biology.

What courses should I take first?
The biological science introductory sequence consists of: BIOLOGY 171, BIOLOGY 172 or 174, and BIOLOGY 173. Students should take 171 or 172/174 first and then follow with the second lecture course and 173. *(Note that the introductory biology sequence courses cannot be taken pass/fail.)*

- Students with an appropriate AP/IB score receive credit for BIOLOGY 195, which is the equivalent of BIOLOGY 171 & 172/174, but does NOT grant credit for 173.
- Transfer students who receive credit for BIOLOGY 191 should take BIOLOGY 192 and BIOLOGY 173 to complete the introductory biology sequence.

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<tr>
<th>BIOLOGY 171</th>
<th>BIOLOGY 172 or 174</th>
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| ...focuses on ecology, biodiversity, and genetics and evolutionary processes. Students engage with biological hypotheses dealing with prominent current issues such as human evolutionary origins, emerging diseases, conservation biology, and global change. | *(prerequisite: prior or concurrent credit for CHEM 130)*
| *(prerequisite = BIOLOGY 171, 172, 174, 191, or 195)* | *(prerequisite: prior or concurrent credit for CHEM 130)*
| ...is the accompanying lab component to the introductory sequence. The course provides an integrated introduction to experimental biology. Topics focus on biochemistry, molecular genetics, evolution, and ecology. | *

Can I transfer courses from another institution?
The Program in Biology will review classes taken at other institutions to determine equivalency to University of Michigan Biology courses. *(Note that 300- and 400-level courses will not be evaluated for equivalent credit.)* If an external class is determined to be equivalent to a U-M course, it can be posted to your transcript as the U-M Biology course (with a "T") when you successfully complete the course and the transfer steps listed on the Biology website: www.lsa.umich.edu/biology/transfercredit. *(Note: You are welcome to request review of a course before you take it. You will need to provide a detailed syllabus, and must obtain one from the instructor in advance.)* At least 10 of the 15 credits required for a minor must be taken in-residence.

See the LSA website for specific policies related to minors:
http://www.lsa.umich.edu/students/academicsrequirements/lsadegreesrequirements/minors.
### ECOLOGY & EVOLUTIONARY BIOLOGY ELECTIVES

**COURSES CURRENTLY APPROVED to fulfill the BIODIVERSITY REQUIREMENT**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>EEB Code</th>
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<tbody>
<tr>
<td>BIO 207*</td>
<td>Microbiology</td>
<td>EEB 442 Biology of Insects</td>
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<tr>
<td>BIO 230*</td>
<td>Introduction to Plant Biology</td>
<td>EEB 443* Biology of Insects at UMBS</td>
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<tr>
<td>BIO 252*</td>
<td>Vertebrate Evolution and Diversity</td>
<td>EEB 450* Biology of Amphibians and Reptiles</td>
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<td>BIO 255*</td>
<td>Plant Diversity</td>
<td>EEB 451* Biology of Mammals</td>
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<td>BIO 256</td>
<td>Environmental Physiology of Animals</td>
<td>EEB 453* Field Mammalogy (UMBS)</td>
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<tr>
<td>BIO 288*</td>
<td>Animal Diversity</td>
<td>EEB 457* Algae of Freshwater Ecosystems (UMBS)</td>
</tr>
<tr>
<td>EEB 330*</td>
<td>Biology of Birds (UMBS)</td>
<td>EEB 459* Systematic Botany</td>
</tr>
<tr>
<td>EEB 341*</td>
<td>Parasitology</td>
<td>EEB 463* Neotropical Plant Families</td>
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<tr>
<td>EEB 380</td>
<td>Oceanography: Marine Ecology</td>
<td>EEB 468* Biology of Fungi</td>
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<tr>
<td>EEB 420</td>
<td>Plant Evolution</td>
<td>EEB 470 Microbial Diversity</td>
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<tr>
<td>EEB 431*</td>
<td>Biology of Animal Parasites (UMBS)</td>
<td>EEB 486* Biology and Ecology of Fishes (UMBS)</td>
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<td>EEB 433*</td>
<td>Ornithology</td>
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<td>EEB 436*</td>
<td>Woody Plants I: Biology and Identification</td>
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<tr>
<td>EEB 440</td>
<td>Biology of Fishes</td>
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*also satisfies lab req.

### ECOLOGY AND EVOLUTIONARY BIOLOGY MINOR REQUIREMENTS

**ECOLOGY AND EVOLUTIONARY BIOLOGY MINOR PREREQUISITES:**

**Introductory Biology Sequence:**

- Choose Sequence A, B, or C:
  - A: BIO 171, BIO 172 or 174, & BIO 173
  - B: BIO 195 (AP/IB) & BIO 173
  - C. BIO 191 (transfer credit), BIO 192, & BIO 173

**ECOLOGY AND EVOLUTIONARY BIOLOGY MINOR:** Courses totaling at least 15 credits, distributed as follows:

- **Core Courses:** Select at least two of the three courses listed. (Courses with an asterisk (*) may overlap with the lab requirement.)
  - Ecology: BIO 281 or EEB 381*
  - Genetics: BIO 305
  - Evolution: EEB 390, 391, or 392*

- **Laboratory Course** (This requirement may OVERLAP with other minor reqs.):
  - Choose one laboratory/field course in BIOLOGY, EEB, or MCDB at the 200-level or higher.
    - EEB/MCDB 300 or 400 (Independent Research), elected for a minimum of 3 credits in a single term, may be used to fulfill a lab requirement. (3 credit max. applies; see CONSTRAINTS below.)

- **Biodiversity Course** (Courses with an asterisk (*) may overlap with the lab requirement.):
  - Choose one course from the approved list (above).

**Additional Courses:**

- Choose additional specific EEB courses, to reach 15 minor credit hours.
  - BIO 241, EEB 301, EEB 302, EEB 800, and non-specific (departmental) transfer courses are EXCLUDED.

**CONSTRAINTS:**

- Prerequisites, introductory science courses, and non-specific (departmental) transfer courses are excluded from the 15 cr. required for the minor.
- A maximum of 3 credits of independent research (BIO 200, EEB/MCDB 300 or 400) may be counted toward the minor.

**Total Credits and GPA Requirement for EEB Minor**

- Minimum 15 cr. in Minor
- Minimum 2.0 GPA in Minor

(GPA is calculated from all mandatory prerequisites, all courses used for minor requirements, and all courses in BIOLOGY, EEB, and MCDB.)