THE UNIVERSITY OF NEW MEXICO

# Major Study Requirements for B.S. in Biology with a Concentration in EEOB

(Ecology, Evolution, and Organismal Biology)

**Fall 2020-Present**

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## Concentration in Ecology, Evolution, and Organismal Biology

Climate change and other pressing environmental problems have led to the increased importance of a solid understanding of Ecology, Evolution, and Organismal Biology (EEOB). The EEOB concentration is intended to provide a depth of understanding at multiple hierarchies of biological organization and expose students to the techniques, methodologies and approaches used by these subdisciplines. Students develop expertise with the biology of a group of organisms, familiarity with methodologies used in study, expertise with the systematics of classification, and significant hands-on experience in the field or research laboratory. The EEOB concentration is only available to students pursuing the Bachelor of Science and is designed to provide a comprehensive background forstudents planning to pursue graduate school or seek a career in a governmental agency.

*Faculty advisement is required for students who wish to complete the concentration in EEOB

## Requirements

Credit Hours

1. Successful completion of the **four-course** introductory Biology sequence:

| | | |
|---|---|---|
| BIOL 2110C | Cell & Molecular Biology | 4 |
| BIOL 2410C | Genetics | 4 |
| BIOL 303/303L | Ecology & Evolution (UNM/University level only) | 4 |
| BIOL 304/304L | Plant & Animal Form & Function (UNM/University level only) | 4 |
| | Subtotal required for this category: | 16 |

2. Successful completion of upper-division courses in **both** Ecology and Evolution:

| | | |
|---|---|---|
| BIOL 300 | Evolution | 3 |
| BIOL 310 (or 409) | T: Principles of Ecology | 3/4 |
| | Subtotal required for this category: | 6/7 |

3. Successful completion of at least **one** taxonomic based course from the following:

| | | |
|---|---|---|
| BIOL 450 | General Virology | 4 |
| BIOL 463L | Flora of New Mexico | 4 |
| BIOL 482L/582L | Parasitology* | 4 |
| BIOL 484/584 | Biology of Fungi* | 4 |
| BIOL 485L/585L | Entomology* | 4 |
| BIOL 486L | Ornithology | 4 |
| BIOL 487L | Ichthyology | 4 |
| BIOL 488L | Herpetology | 4 |
| BIOL 489L | Mammalogy | 4 |
| (Or substitution approved by faculty advisors) | | |

4. Successful completion of at least **one** synthetic/comparative taxonomic based course and lab from the following:

| | | |
|---|---|---|
| BIOL 351/352L | Microbiology w/lab | 4 |
| BIOL 360L | General Botany | 4 |
| BIOL 371L | Invertebrate Biology | 4 |
| BIOL 386L | General Vertebrate Zoology | 4 |

5. Successful completion of at least **one** statistics course from the following:

| | | |
|---|---|---|
| PSYC 2510 | Statistical Principles | 3 |
| MATH 1350 | Introduction to Statistics | 3 |
| STAT 345 | Elements of Mathematical Statistics and Prob. | 3 |
| STAT 427 | Advanced Data Analysis I | 3 |
| (Or substitution approved by faculty advisors) | | |

6. Successful completion of at least **one** course from each of the following three clusters or faculty approved substitution:

### A. Individual (Genes/Physiology) Cluster Course

| | | |
|---|---|---|
| BIOL 401 | T: Microbial Genetics | 3/4 |
| BIOL 435 | Animal Physiology | 3 |
| BIOL 471/571 | Plant Physiological Ecology* | 3 |

### B. Population (Behavior/Population Biology) Cluster Course

| | | |
|---|---|---|
| BIOL 409 | T: Conservation Genetics | 3 |
| BIOL 409 | T: Sexual Systems in Animals: Diversity & Ev. | 3 |
| BIOL 455 | Ethology: Animal Behavior | 3 |
| BIOL 491/591 | Population Genetics* | 3 |
| ANTH 360 | Human Behavioral Ecology | 3 |
| ANTH 363 | Primate Social Behavior | 3 |
| ANTH 491 | Population Genetics | 3 |

### C. Community/Ecosystem Cluster Course

| | | |
|---|---|---|
| BIOL 405/505 | Ecosystem Dynamics* | 3 |
| BIOL 409 | T: Ecology of Plant Microbe Symbiosis | 3 |
| BIOL 480/580 | Global Change Biology* | 3 |
| BIOL 451 | Microbial Ecology | 3 |
| BIOL 475/575 | Plant Community Ecology* | 3 |
| BIOL 495 | Limnology | 3 |
| BIOL 511 | Macroecology* | 3 |
| BIOL 514/535 | Ecosystem Studies*-Freshwater Ecosystems | 3 |

7. **One** demonstration of significant hands-on experience in the field or research laboratory.

| | | |
|---|---|---|
| BIOL 400 | Senior Honor's Thesis | Varies |
| BIOL 408L | Bosque Internship | 3 |
| BIOL 409 | T: Ornithological Field Expedition | 4 |
| BIOL 461L | Introduction to Tropical Biology | 3 |
| BIOL 463L | Flora of New Mexico | 4 |
| BIOL 495/496L | Limnology w/ Laboratory | 4 |
| BIOL 499 | Undergraduate Problems | 1 |
| PSY 465L | Gorilla Observation Laboratory | 3 |
| ● Successful completion of an approved field course at UNM or anotherinstitution | | |
| ● Participation in an NSF REU program at UNM or another institution | | |
| ● Another field experience with prior approval by faculty advisors | | |

8. Successful completion of at least **one** interdisciplinary synthetic course or faculty approved substitution:

| | | |
|---|---|---|
| BIOL 324L | Natural History of the Southwest | 4 |
| BIOL 379 | Conservation Biology | 3 |
| BIOL 419 | Topics in Interdisciplinary Science | 3/4 |
| BIOL 445/545 | Biology of Toxins* | 3 |
| BIOL 490 | Biology of Infectious Organisms | 3 |
| BIOL 492/592 | Introduction to Mathematical Biology* | 3 |
| BIOL 494 | Biogeography | 3 |
| BIOL 495 | Limnology | 3 |
| ANTH 350 | Human Biology | 3 |
| ANTH 357 | Human Origins | 3 |
| BIOC 423 | Introductory Biochemistry | 3 |
| EPS 352/439 | Global Climate Change/Paleoclimatology | 3 |

9. Successful completion of at least **one** semester of “Brown Bag” seminar:

| | | |
|---|---|---|
| BIOL 402 | T: Brown Bag Seminar | 1-2 |

10. Successful completion of additional **Biology (BIOL) courses** so that the total number of Biology credit hours is greater than or equal to **48** hours for the Bachelor of Science.

11. Successful completion of supportive courses in Math, Physics, and Chemistry:

| | | | | | |
|---|---|---|---|---|---|
| MATH | 1430/1440 | **OR** | MATH | 1512/1522 | 6-8 |
| PHYS | 1230/1240 | **OR** | PHYS | 1310/1320 | 6 |
| CHEM | 1215/1215L | **AND** | CHEM | 1225/1225L | 8 |
| PLUS one semester Organic Chemistry with Lab (CHEM 301/303L) or CHEM 2120 (4) | | | | | |

*Graduate courses require approval from faculty & the College of Arts and Sciences Advisement Center for undergraduate enrollment

THE UNIVERSITY OF NEW MEXICO

**Plan of Study for BS degree in Biology with Concentration in EEOB**

(Please list course and semester completed)

| Name: | UNM ID#: | Email: @unm.edu |
|---|---|---|

1. Four-course introductory Biology sequence

| | | Date of Completion |
|---|---|---|
| BIOL 2110C | Cell & Molecular Biology | |
| BIOL 2410C | Genetics | |
| BIOL 303/303L | Ecology & Evolution | |
| BIOL 304/304L | Plant & Animal Form & Function | |

2. Successful completion of upper-division courses in **both** Ecology & Evolution

| | | Date of Completion |
|---|---|---|
| BIOL 300 | Evolution | |
| BIOL 310 (or 409) | T: Principles of Ecology | |

3. Successful completion of at least **one** taxonomic based course

| Course | Date of Completion |
|---|---|
| | |

4. Successful completion of at least **one** synthetic/comparative taxonomic based course and lab

| Course | Date of Completion |
|---|---|
| | |

5. Successful completion of at least **one** statistics course

| Course | Date of Completion |
|---|---|
| | |

6. Successful completion of at least **one** course from each of the three clusters (A,B,C)

| Course | Date of Completion |
|---|---|
| **A.** | |
| **B.** | |
| **C.** | |

7. **One** demonstration of significant hands-on experience in the field or research laboratory

| Course | Date of Completion |
|---|---|
| | |

8. Successful completion of at least **one** interdisciplinary synthetic course

| Course | Date of Completion |
|---|---|
| | |

9. Successful completion of at least **one** semester of “Brown Bag” seminar

| Course | Date of Completion |
|---|---|
| | |

10. Additional BIOL courses to reach a total of 48 for the BS

| Course | Date of Completion |
|---|---|
| | |
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11. Successful completion of supportive courses in Math, Physics, and Chemistry

| Subject | Course | Date of Completion |
|---|---|---|
| **Math** | | |
| **Physics** | | |
| **Chemistry** | CHEM 1215/1215L | |
| | CHEM 1225/1225L | |
| | CHEM 301/303L | |

Signatures:

Student Date

A&S Undergraduate Advisor- Biology Date

EEOB Faculty Advisor Date

(Updated 7/19/2021)