ZOOLOGY MAJOR (B.A.)

https://colsa.unh.edu/biological-sciences/program/ba/zoo-major

Description

Built upon the common background of the biology core curriculum, the Bachelor of Arts (B.A.) in Zoology is designed for students to create an interdisciplinary or dual major, particularly if they want to pursue public relations, teaching, or other careers in combination with a liberal arts background. Students have more flexibility when choosing courses from the biology core and may enter this program as freshmen or transfer in from other liberal arts or science programs. Students must fulfill a foreign language requirement in lieu of one advanced elective.

New England Regional Student Program

The bachelor’s degree in zoology is one of the specialized curricula recognized by the New England Board of Higher Education and participates in the New England Regional Student Program. Under this program, students from any of the New England states pay the UNH in-state tuition rate plus 75 percent.

General Science Certification

See Department of Education

Requirements

Requirements for the Major: Minimum grade of D# or better is required in CHEM 411, PHYS 401, and MATH 424B (if taken); minimum grade of C# or better is required in all other courses. ZOOL 600, BIOL 695, ZOOL 795, or ZOOL 799 may substitute for one elective with academic advisor approval, but only if taken for at least four credits. These four credits may be spread over multiple semesters if they are consecutive and with the same faculty mentor.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIOL 411</td>
<td>Introductory Biology Molecular and Cellular</td>
<td>4</td>
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<tr>
<td>BIOL 412</td>
<td>Introductory Biology Evolution, Biodiversity and Ecology</td>
<td>4</td>
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<tr>
<td>BIOL 528</td>
<td>Applied Biostatistics I</td>
<td>4</td>
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<tr>
<td>BIOL 541</td>
<td>Ecology</td>
<td>4</td>
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<td>BMSC 501</td>
<td>Biological Chemistry</td>
<td>4</td>
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<tr>
<td>CHEM 411</td>
<td>Introductory Chemistry for Life Sciences</td>
<td>4</td>
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<tr>
<td>GEN 604</td>
<td>Principles of Genetics</td>
<td>4</td>
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<tr>
<td>ANSC 612</td>
<td>Principles of Genetics</td>
<td>4</td>
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<td>PHYS 401</td>
<td>Introduction to Physics I</td>
<td>4</td>
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<tr>
<td>ZOOL 400</td>
<td>Professional Perspectives in Zoology</td>
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<td>ZOOL 518</td>
<td>Comparative Morphology and Biology of Vertebrates</td>
<td>4</td>
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<tr>
<td>ZOOL 625</td>
<td>Principles of Animal Physiology</td>
<td>3</td>
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<tr>
<td>ZOOL 780</td>
<td>Capstone Companion Course</td>
<td>1</td>
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Zoology Electives

Zoology Elective Courses (Choose 2) 8-9

- ZOOL 529 Developmental Biology
- ZOOL 613 Animal Behavior
- ZOOL 690 Evolution
- Animal Survey Courses (Choose 1) 4-5
  - ZOOL 542 Ornithology
  - ZOOL 555 Introduction to Entomology
  - ZOOL 566 Herpetology
  - MEFB 628 Marine Invertebrate Evolution and Ecology

- ZOOL 710 Sharks and Bony Fishes
- NR 712 Mammalogy

Biological Science Electives

Select one course from the following list 1 4-5

- BIOL 720 Plant Animal Interactions (C) 4
- MAMS 718 Mammalian Physiology 4
- MEFB 503 Introduction to Marine Biology 0 or 4
- MEFB 504 Field Wildlife Forensics 2
- MEFB 628 Marine Invertebrate Evolution and Ecology 5
- MEFB 717 Lake Ecology 4
- MEFB 719 Field Studies in Lake Ecology 4
- MEFB 755 Biological Oceanography 3
- MEFB 772 Fishes/Biology: Conservation and Management 4
- MEFB 773 Physiology of Fishes 4
- NR 615 Wildlife Habitats 4
- NR 640 Wildlife Population Ecology 4
- NR 642 Introduction to Biogeography 4
- NR 650 Principles of Conservation Biology 4
- NR 712 Mammalogy 4
- NSB 705 Molecular and Cellular Neurobiology (C) 4
- NSB 727 Animal Communication (C) 4
- NSB #728 Research Methods in Animal Behavior 4
- TECH 797 Undergraduate Ocean Research Project 2
- ZOOL 529 Developmental Biology 0 or 4
- ZOOL 542 Ornithology 0 or 4
- ZOOL 555 Introduction to Entomology 4
- ZOOL 566 Herpetology 4
- ZOOL 600 Field Experience 1-4
- ZOOL 613 Animal Behavior 5
- ZOOL 690 Evolution 4
- ZOOL 708 Stream Ecology 4
- ZOOL 710 Sharks and Bony Fishes 0 or 4
- ZOOL 726 Conservation Behavior 4
- ZOOL 733 Behavioral Ecology (C) 0 or 4
- ZOOL 736 Genes and Behavior (C) 4
- ZOOL 770 Senior Seminar in Zoology 2
- ZOOL 777 Neuroethology (C) 4
- ZOOL 795 Independent Investigations in Zoology 1-4
- ZOOL 799 Honors Senior Thesis 1-4

Shoals Courses:

- MEFB 500 Coastal Habitat Field Research Methods 4
- MEFB 4555 Introduction to Applied Science Communication 4
- MEFB 506 Marine Parasitology and Disease 4
- MEFB 510 Field Ornithology 4
- MEFB 530 Evolution and Marine Diversity 4
- MEFB 535 Marine Mammal Biology 4
- MEFB 630 Biodiversity and Biology of Marine Invertebrates 4
- MEFB 674 Ecology and Marine Environment 4
- MEFB 702 Sustainable Marine Fisheries 4
- MEFB 714 Field Animal Behavior 4
- MEFB 730 Underwater Research 4
- MEFB 741 Sharks: Biology and Conservation 4
- MEFB 751 Research in Marine Biology 4
- MEFB 754 Anatomy and Function of Marine Vertebrates 4

Study Abroad Courses:

- NR 660 Ecology and Biogeography of New Zealand 5
- NR 661 Restoration Ecology and Ecosystem Management in New Zealand 4
- NR 662 Environmental Policy, Planning and Sustainability in New Zealand 3
- NR 663 Applied Directed Research in New Zealand 4
A single course cannot be used for both a core requirement and an elective (e.g., ZOOL 542 cannot be used to fulfill the animal survey requirement and as an elective).

**Capstone Experience**

As part of the University of New Hampshire's Discovery Program requirements, all students must complete a capstone experience during their senior year (after earning at least 90 credits). The capstone experience for students majoring in Biology consists of BOTH (1) an approved individual experience AND (2) the successful completion of the BIOL 780 Capstone Companion Course. Students will not be approved for graduation until capstone certification has been granted.

1) **The individual experience**

The individual experience may be satisfied through various forms of experiential learning (e.g., Honors thesis, mentored research project, internship) or a course denoted with a “(C)” in the courses listed above. The individual experience must fulfill at least one of the University’s capstone criteria:

- synthesizes and applies disciplinary knowledge and skills
- fosters reflection on undergraduate learning and experience
- demonstrates emerging professional competencies
- applies, analyzes, and/or interprets research, data, or artistic expression
- explores areas of interest based on the integration of the prior learning

Before beginning any capstone individual experience, students MUST SUBMIT A COMPLETED CAPSTONE APPROVAL FORM to their Program Coordinator.

Students can obtain this form on the Department’s Capstone page or from their Program Coordinator. Here they will describe their proposed individual experience and how it fulfills at least one of the University’s capstone criteria listed above. If the student is selecting a “C” course for their individual experience, they should obtain the course syllabus from the instructor for information about the course’s content and learning objectives.

2) **Enrollment in BIOL 780 Capstone Companion Course**

Students will also be required to enroll in BIOL 780 (1 cr.) during the semester of their individual experience. BIOL 780 is offered every Fall and Spring semester.

- If the individual experience is a two-semester thesis, BIOL 780 should be taken during the second semester.
- If the individual experience occurs during the summer (e.g., internship), BIOL 780 should be taken during the Fall semester that immediately follows.
- Note: Because BIOL 780 is not offered during the summer, students cannot complete their individual experience during the summer and graduate during that same August. Summer experiences could only be used as individual capstone experiences if completed the summer before the student’s senior year.

**Student Learning Outcomes**

Students demonstrate that they understand basic principles of Zoology.

- Understand the biodiversity and ecological roles of selected animal taxa.
- Demonstrate understanding of animal physiology and structure at the cellular and organismal levels.
- Describe and apply key principles and mechanisms of evolution and genetics.
- Comprehend the relationship between organisms and their environments.

Students demonstrate that they can undertake scientifically valid methods of inquiry.

- Demonstrate proficiency in searching, reading, and understanding scientific literature.

Students demonstrate that they can think critically and analytically.

- Analyze and present data using appropriate quantitative and graphical tools.

Students demonstrate that they can communicate effectively.

- Develop effective written and oral communication skills for conveying scientific information effectively to a wide audience.

Students practice science responsibly and ethically, and acknowledge the influence of cultural and historical biases in the sciences.