

# ANIMAL BIOLOGY, BACHELOR OF SCIENCE

College of Agricultural & Environmental Sciences

## The Major

Animal Biology Major (<https://abi.ucdavis.edu/>);  
Faculty ([https://entomology.ucdavis.edu/people/?first=&last=&title=&unit=&field\\_sf\\_person\\_type\\_target\\_id%5B0%5D=26](https://entomology.ucdavis.edu/people/?first=&last=&title=&unit=&field_sf_person_type_target_id%5B0%5D=26))

## The Major Program

The Animal Biology major offers students training in the biological and natural sciences as they apply to animals. The major covers basic biological sciences foundational to understanding animal evolution, systematics, ecology, physiology and molecular biology. Students in the Animal Biology major are encouraged to think beyond particular groups of animals in which they are interested and to consider science as a process and a way of learning new things about them, and of advancing society. The program emphasizes biological principles used in research and in solving societal conflicts with animals in agriculture, urban areas, or natural environments.

## The Program

The major consists of core courses in the sciences that build an understanding of animal biology from the molecular to the ecological and evolutionary levels of organization. After completing these core courses, students choose an interdisciplinary practicum project from general animal biology, predicated on their ultimate career goals. They plan this emphasis of study in a required discussion-seminar course and in consultation with a mentor. The program includes a senior thesis, which each student employs the process and principles of science to propose and carry out the practicum project they choose, integrating the disciplines of the major. The Animal Biology major emphasizes research in biological principles as opposed to animal care and husbandry.

## Practicum Research & Career Alternatives

The Animal Biology program and professional research interests of each student guides him or her in Practicum and career choices. On- and off-campus Practicum research opportunities occur in research laboratories, at field situations, in zoos and public aquariums, with governmental agencies, national and state parks with private industry, and in international programs. A degree in Animal Biology prepares students for careers in research, teaching, academia, governmental regulation, health, or agriculture where these emphasize integrative biology of animals. Careers in veterinary medicine, animal husbandry and animal management remain open to Animal Biology majors as well, however, other preparation may be required. Students in the major focus on gaining research experience, and become well prepared to continue their training at the graduate or professional level in a variety of biological disciplines.

## Master Advisor

R. Kimsey

## Major Advisor

E. Galvan Hack

**Advising Center** for the major, including peer advising, is located in 150 and Academic Advisor located in 160 Hutchison Hall; 530-754-7277; [abi-advising@ucdavis.edu](mailto:abi-advising@ucdavis.edu).

| Code                                       | Title   | Units |
|--|---|-------|
| <b>Preparatory Subject Matter</b>          |   |       |
| <i>Biological Science</i>                  |   | 15    |
| BIS 002A                                   | Introduction to Biology: Essentials of Life on Earth  |       |
| BIS 002B                                   | Introduction to Biology: Principles of Ecology & Evolution  |       |
| BIS 002C                                   | Introduction to Biology: Biodiversity & the Tree of Life  |       |
| <i>Chemistry</i>                           |   | 21-23 |
| CHE 002A                                   | General Chemistry   |       |
| CHE 002B                                   | General Chemistry   |       |
| CHE 002C                                   | General Chemistry   |       |
| Choose a series:                           |   |       |
| CHE 008A & CHE 008B                        | Organic Chemistry: Brief Course and Organic Chemistry: Brief Course                                     |       |
| CHE 118A & CHE 118B                        | Organic Chemistry for Health & Life Sciences and Organic Chemistry for Health & Life Sciences           |       |
| <i>Mathematics; choose a series:</i>       |   | 9-12  |
| MAT 016A & MAT 016B & MAT 016C             | Short Calculus and Short Calculus and Short Calculus  |       |
| MAT 017A & MAT 017B & MAT 017C             | Calculus for Biology & Medicine and Calculus for Biology & Medicine and Calculus for Biology & Medicine |       |
| MAT 021A & MAT 021B & MAT 021C             | Calculus and Calculus and Calculus  |       |
| <i>Physics</i>                             |   | 12    |
| PHY 007A                                   | General Physics   |       |
| PHY 007B                                   | General Physics   |       |
| PHY 007C                                   | General Physics   |       |
| <i>Statistics; choose one:</i>             |   | 4     |
| STA 013 or STA 013Y                        | Elementary Statistics   |       |
| STA 100                                    | Applied Statistics for Biological Sciences  |       |
| <i>Animal Biology</i>                      |   | 8     |
| ABI 050A                                   | Animal Biology Laboratory   |       |
| ABI 050B                                   | Animal Biology  |       |
| ABI 050C                                   | Animal Biology  |       |
| <b>Preparatory Subject Matter Subtotal</b> |   | 69-74 |
| <b>Depth Subject Matter</b>                |   |       |
| <i>Animal Biology</i>                      |   | 5     |
| ABI 187                                    | Animal Biology Seminar  |       |
| ABI 189                                    | Senior Practicum  |       |
| ABI 189D                                   | Senior Practicum Discussion   |       |
| <i>Biological Science</i>                  |   | 4     |
| BIS 101                                    | Genes & Gene Expression   |       |
| Choose a series:                           |   | 6-10  |

|  |                                      |                |
|--|--------------------------------------|----------------|
| ABI 102  | Animal Biochemistry & Metabolism     |                |
| ABI 103  | Animal Biochemistry & Metabolism     |                |
| BIS 102  | Structure & Function of Biomolecules |                |
| BIS 103  | Bioenergetics & Metabolism           |                |
| Choose one:  |                                      | 3-5            |
| NPB 101  | Systemic Physiology                  |                |
| NPB 117  | Avian Physiology                     |                |
| ENT 102  | Insect Physiology                    |                |
| WFC 121  | Physiology of Fishes                 |                |
| Choose one:  |                                      | 3-4            |
| APC 100/NPB 123  | Comparative Vertebrate Organology    |                |
| ENT 101  | Functional Insect Morphology         |                |
| <i>Evolution &amp; Ecology</i>   |                                      | 4              |
| EVE 100  | Introduction to Evolution            |                |
| Choose one:  |                                      | 4              |
| ESP 100  | General Ecology                      |                |
| ESP 121  | Population Ecology                   |                |
| EVE 101  | Introduction to Ecology              |                |
| EVE 102  | Population & Quantitative Genetics   |                |
| Depth Subject Matter Subtotal  |                                      | 29-36          |
| <b>Restricted Electives</b>  |                                      |                |
| Focused specialty upper division courses as outlined in the student's major proposal (from ABI 187) with approval of an advisor. |                                      | 25             |
| Restricted Electives Subtotal  |                                      | 25             |
| <b>Total Units</b>   |                                      | <b>123-135</b> |