## Animal Behavior, Ecology, and Conservation - ABEC

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>ABEC 101</td>
<td>Introductory Animal Behavior I</td>
<td>3</td>
<td>This course covers a broad overview of animal behavior, from the ideas and theories that have shaped the field to basic approaches used to study behavior. We will discuss behavior from a variety of animals, ranging from insects to mammals (including humans!). Special attention will be given to examining the research that shapes the field. Offered: every fall.</td>
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<tr>
<td>ABEC 102</td>
<td>Introductory Animal Behavior II</td>
<td>3</td>
<td>Foundational evolutionary and ecological theories in Animal Behavior. Explore key behaviors that lead to an animal's survival including foraging, mating, habitat selection, and social behavior as well as methods to study animal behavior. Also compare animal behavior in the news to the scientific literature. Offered: every spring.</td>
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| ABEC 105    | ABEC Test Course                                      | 1       | AB Test Course  
Prerequisite: ABEC 101 and ABEC 102. Offered: once a year. |
| ABEC 216    | Topics in Animal Behavior                             | 3       | Topics in animal behavior will cover varying subdisciplines within animal behavior to offer students an in-depth learning experience. Topics may include areas such as companion animal care, wildlife rehabilitation, captive management, and educating about wildlife. Prerequisite: ABEC101 or ABEC102. Offered: occasionally. |
| ABEC 217    | Connecting ABEC to the Wider World                    | 3       | This course aims to introduce and explore the many ways that a degree in Animal Behavior, Ecology, and Conservation (including the four minor areas of Anthrozoology, Animal Behavior, Conservation, and Zoo Biology) is beneficial across a variety of professions. Through readings, discussion and interviews with professionals at various stages of their careers, students will learn how to leverage their academic experience in pursuit of a successful professional career. Prerequisite: ABEC 101 or ABEC 102 (may be taken concurrently). Offered: every spring. |
| ABEC 219    | Diversity of Life                                     | 3       | Explore the immense diversity of life from an evolutionary perspective. This course will focus on the characteristics and ecological functions of the major groups of prokaryotes, protists, plants, fungi, and animals. Prerequisite: ABEC 101 and ABEC 102 (may be taken concurrently). Offered: once a year. |
| ABEC 220    | Animal Learning                                      | 3       | Animal learning and memory research with emphasis on practical animal training. Lab required. Prerequisites: ABEC 101 & ABEC 102. Corequisite: ABEC 220L. Offered: every spring. |
| ABEC 220L   | Animal Learning Lab                                   | 1       | Required animal learning lab that emphasizes practical animal training. Prerequisites: ABEC 101 & ABEC 102. Corequisite: ABEC 220. Offered: every spring. |
| ABEC 250    | Zoo Animal Husbandry                                  | 1       | Topics in animal husbandry in the zoo setting. Focus is on the specific needs of different taxonomic groups, environmental management, veterinary monitoring, nutrition, and programming. Prerequisites: ABEC 101 & ABEC 102. Offered: Spring of odd-numbered years. |
| ABEC 251    | Zoo Animal Management                                 | 3       | Modern practices in zoo mission implementation. Focus on managing many facets of zoos: individual animals, populations of animals, visitors, research, education, staff, and budgets. The course is highly project-based and involves considerable group work and participation. Prerequisites: ABEC 101 & ABEC 102. Offered: every spring. |
| ABEC 300    | Research Participation (no credit)                   | 0       | Recognition for ABEC research assistants, does not carry and credits. Restriction: permission of instructor. Offered: every semester." |
| ABEC 301    | Research Participation (credit)                      | 1       | Recognition for ABEC research assistants. Can be taken up to 3 times for major elective credit; more than three times credit is free-elective. Restriction: permission of instructor. Offered: every semester. |
| ABEC 303    | Shelter Behavior                                     | 3       | This course will expose students to a variety of animal sheltering models. Students will assess the impacts of each type of model on the behavior of shelter animals and prospective adopters. Students will also take an in-depth look at why so many animals are relinquished to shelters and at the programs shelters have established to help keep pets in their homes. Prerequisites: ABEC 101 and ABEC 102. Offered: every fall. |
| ABEC 319    | Anthrozoology                                         | 3       | An engagement with the fundamental issues of the field of Anthrozoology by evaluating the history of human/ nonhuman interactions, the categories into which humans have sorted animals, and a variety of science-based and value-based approaches to humans' inevitable intersection with other living beings. Prerequisite: ABEC 101 & ABEC 102 or ABEC 215. Offered: every spring. |
| ABEC 332    | Animal Welfare                                        | 3       | This course will examine critical debates and controversies surrounding our care and use of animals. We will use a case study approach, and use scientific research to evaluate real world issues in animal welfare. The case studies will cover companion animals, wildlife, zoo animals, and animals used in agriculture and research. This course involves significant writing. Prerequisite: ABEC 101 & ABEC 102. Restriction: juniors and seniors only. Offered: every spring. |
| ABEC 333    | Conservation Behavior                                 | 3       | How human activity has altered the planet and how those modifications affect the behavior of animals. Review of key principles through the lens of Behavioral Ecology in regards to species requirements for survival, major threats to species existence, and conservation solutions to reduce those threats. Identification of positive human behavior for conservation outcomes. Prerequisites: ABEC 101 & ABEC 102. Offered: every fall. |
ABEC 335 Conservation Education 3 Credits
Applying the theories and principles of conservation psychology to education in informal settings (zoos, aquariums, wildlife refuge). Assessing attitude and behavioral outcomes of conservatvin education programs.
Prerequisites: ABEC 101 & ABEC 102. Restriction: juniors and seniors only.
Offered: most fall semesters.

ABEC 336 Children and Animals 3 Credits
This course considers how animals play distinct roles in child development, children's cultures, and even in the social construction of 'childhood.' It draws upon psychology, ethology, ethics, cultural studies, education, and anthropology.
Prerequisites: ABEC 101 & ABEC 102. Restriction: juniors and seniors only.
Offered: fall of even-numbered years.

ABEC 339 Animal Enrichment 3 Credits
This course emphasizes the role of enrichment in various contexts (laboratory, shelter, and zoo). Multiple opportunities to design and implement enrichment are provided. The course uses the S-P-I-D-E-R framework for enrichment design and effectiveness.
Prerequisites: ABEC 101 & ABEC 102.
Offered: spring of even-numbered years.

ABEC 340 Research Methods in Animal Behavior 3 Credits
Observational and experimental research methods commonly used in studies of wild, captive, and domesticated animals. Evaluate peer-reviewed journal articles, research questions and hypotheses, collect behavioral data in observational and experimental contexts, and analyze and interpret data.
Prerequisites: ABEC 101, ABEC 102, & one of the following: MAT 131, MAT 141, or PSY 202.
Fulfills College Core: Advanced Writing-Intensive
Offered: every fall.

ABEC 341 Urban Ecology 3 Credits
Critical examination of the natural ecosystems in which cities are embedded, from soil and vegetation to biodiversity and landscape scale processes. Investigations into how cities are both centers of human production and consumption that shape global ecologies as well as areas of critical habitat for nonhuman animals, with an aim to understand and promote coexistence.
Prerequisites: ABEC 101 & ABEC 102.
Offered: fall of odd-numbered years.

ABEC 341L Urban Ecology Lab 1 Credit
Using Buffalo as a natural laboratory, visit urban sites of varying characteristics to analyze the effects of different types of urban development and management on ecosystems. Speak to local managers, collect and analyze ecological data, observe urban impacts to wildlife and ecosystems, as well as the connection between social and ecological systems in Buffalo.
Prerequisites: ABEC 101 & ABEC 102. Corequisite: ABEC 341.
Offered: fall of even-numbered years.

ABEC 343 Zoogeography 3 Credits
Zoogeography is the branch of biogeography that focuses on the historic and current distribution of animals across the earth. Evolutionary and ecological processes will be explored to understand geographical patterns.
Prerequisite: ABEC 101 and ABEC 102.
Offered: occasionally.

ABEC 345 Herpetology 3 Credits
This course will explore the diversity, evolutionary relationships, ecology, behavior, and conservation of reptiles and amphibians.
Prerequisite: BIO 111 & BIO 112.
Offered: fall of even-numbered years.

ABEC 345L Herpetology Lab 1 Credit
Optional laboratory for ABEC 345 (herpetology) covers field techniques, applied conservation methods, taxonomic diversity, and identification of local species. Seats in the laboratory section are first come, first serve.
Prerequisite: BIO 111 & BIO 112. Corequisite: ABEC345.
Offered: fall of even-numbered years.

ABEC 346 Integrative Behavior 3 Credits
Integrating numerous fields of Biology, this course will examine both proximate and ultimate causes of behavior, focusing on the neuroendocrine mechanisms that lead to the expression of behavior within given ecological contexts. Emphasis will be given to understanding historical and recent primary literature.
Prerequisite: ABEC101 and ABEC102.
Offered: spring of odd-numbered years.

ABEC 347 Avian Conservation and Management 3 Credits
Application of ecological and behavioral principles to the conservation and management of birds. Combines classroom and field experiences to explore applied aspects of anatomy, physiology, taxonomy, and behavior in the conservation and management of major North American avian groups and their habitat.
Prerequisite: ABEC 101 and ABEC 102.
Offered: occasionally.

ABEC 351 Zoo Exhibitry 1 Credit
Critical evaluation of zoo design principles. Involves travel to obtain first-hand study of distant zoological institutions. Additional fee required. Cost varies based on destination, but generally are between $200 and $350.
Prerequisite: ABEC 101 or ABEC 102.
Offered: annually.

ABEC 360 Observational Research Methods 4 Credits
Study of the principal procedures used in animal behavior research. Involves the conduct of independent research project, from formulation of hypothesis through to presentation of results. Statistical analysis of data is a key component of the class, and students are expected to have completed their statistics requirement.
Prerequisites: ABEC 101, ABEC 102, & one of the following: MAT 131, MAT 141, or PSY 201. Restriction: juniors and seniors only.
Fulfills College Core: Advanced Writing-Intensive
Offered: spring of odd-numbered years.

ABEC 363 Dog Evolution, Behavior and Cognition 3 Credits
Introduction to the latest theories regarding how dogs evolved and were domesticated; how dogs communicate with humans and with each other, exposure to ground-breaking research into dog behavior, learning, cooperation, and cognition.
Prerequisites: ABEC 101 & ABEC 102. Restriction: juniors and seniors only.
Offered: every spring.

ABEC 370 Animal Cognition 3 Credits
This course will critically examine the mental lives of animals. We will attempt to better understand what animals are thinking and how and why they make particular decisions. The emphasis of this course is on critically evaluating research claiming to demonstrate or refute the presence of cognitive abilities across species. Topics studied will include perception, tool use, communication, emotions, and many more.
Prerequisite: ABEC 101 & ABEC 102. Restriction: juniors and seniors only.
Offered: every spring.
ABEC 402 Desert Conservation 3 Credits
This field course will focus on the complex desert ecosystems of the United States and conservation efforts. A week of summer travel will include visits to National Parks and Wildlife Refuges, Nature Preserves, and remote field study sites. Additional fee required will cover all travel costs. Please contact the course instructor for current fees.
Prerequisite: ABEC101 and ABEC102.
Offered: occasionally.

ABEC 403 Tropical Ecology 3 Credits
This field course provides an in-depth look at the ecology of tropical ecosystems and issues associated with their conservation. During the first portion of the spring semester, students will study the ecology of tropical forest and savannah environments, learn about the conservation issues that impact tropical wildlife species and local communities, and plan a small research study that will be carried out during the field portion of the course. Over spring break, students will complete their research project and participate in weekly discussions and reflections about community-based conservation.
Prerequisite: ABEC 101 or ABEC 102.
Offered: most springs.

ABEC 404 Wildlife Ecology and Conservation in Africa 3 Credits
Field experience in Africa, emphasizing field methods for animal observation, community-based conservation, and wildlife behavior and management. This course involves early application (previous fall), AND travel during summer. Additional fee required. Please contact the course instructor for current fees.
Prerequisite: ABEC 101 & ABEC 102. Restriction: seniors only and permission of instructor.
Fulfills College Core: Core Capstone
Offered: every fall.

ABEC 405 Biocultural Diversity Conservation in Costa Rica 3 Credits
This field course provides an in-depth look at the complex sociocultural and political aspects of wildlife conservation and environmental sustainability by immersing students in research, workshops, readings, and discussions with local community groups and conservation experts in Costa Rica. We will travel to the capital of San Jose, where we will meet with professors working at University for Peace, to learn about some of the history around conservation, indigenous peoples, and sustainability in Costa Rica. We will also learn about current work being done at the national and local level in areas of environmental education and community advocacy. We will then travel to Santa Elena to spend five days engaged in wildlife tours, participating in education workshops, and hearing from guest speakers about re-wilding projects, river protection, sustainable farming, and new ecotourism programs. Finally, we will travel to the beautiful coastal town of Manuel Antonio to stay and volunteer with Kids Saving the Rainforest, a non-profit organization dedicated to wildlife rehabilitation, environmental education, and conservation of wildlife. We will work with the public in small research projects at Manuel Antonio National Park to learn about human-wildlife interactions there. Additional fee required. Please contact the course instructor for current fees.
Prerequisites: ABEC 101 & ABEC 102.
Offered: fall of odd-numbered years.

ABEC 405 Biocultural Diversity Conservation in Costa Rica 3 Credits
This field course provides an in-depth look at the complex sociocultural and political aspects of wildlife conservation and environmental sustainability by immersing students in research, workshops, readings, and discussions with local community groups and conservation experts in Costa Rica. We will travel to the capital of San Jose, where we will meet with professors working at University for Peace, to learn about some of the history around conservation, indigenous peoples, and sustainability in Costa Rica. We will also learn about current work being done at the national and local level in areas of environmental education and community advocacy. We will then travel to Santa Elena to spend five days engaged in wildlife tours, participating in education workshops, and hearing from guest speakers about re-wilding projects, river protection, sustainable farming, and new ecotourism programs. Finally, we will travel to the beautiful coastal town of Manuel Antonio to stay and volunteer with Kids Saving the Rainforest, a non-profit organization dedicated to wildlife rehabilitation, environmental education, and conservation of wildlife. We will work with the public in small research projects at Manuel Antonio National Park to learn about human-wildlife interactions there. Additional fee required. Please contact the course instructor for current fees.
Prerequisites: ABEC 101 & ABEC 102.
Offered: fall of odd-numbered years.

ABEC 491 Internship 1 3 Credits
Internship in animal-related setting. Joint supervision by faculty and agency personnel. Application of classroom lessons to real-world situations. Students should register for the section most closely related to the internship activities. Section A is Anthrozoology, Section B is Animal Behavior, Section C is Conservation, and Section Z is Zoo Biology.
Prerequisites: ABEC 101 and 102, junior or senior standing, minimum GPA of 2.0 in the major, a positive recommendation from a faculty member, & a completed & approved internship application.

ABEC 492 Internship 2 3 Credits
Internship in animal-related setting. Joint supervision by faculty and agency personnel. Application of classroom lessons to real-world situations. Students should register for the section most closely related to the internship activities. Section A is Anthrozoology, Section B is Animal Behavior, Section C is Conservation, and Section Z is Zoo Biology.
Prerequisites: junior or senior standing, minimum GPA of 2.0 in the major, a positive recommendation from a faculty member, & a completed & approved internship application.

ABEC 495 Independent Research 3 Credits
Independent project conducted under the supervision of a faculty member.
Prerequisites: ABEC 101 & ABEC 102. Restriction: permission of instructor.