ANIMAL BEHAVIOR, ECOLOGY, AND CONSERVATION - ABEC

ABEC 101 Introductory Animal Behavior I **3 Credits**
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 how animal behavior is shaped by both evolution and learning principles.
Offered: every fall.

ABEC 102 Introductory Animal Behavior II **3 Credits**
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. A significant focus on the process of research and scientific literature.
Offered: every spring.

ABEC 216 Topics in Animal Behavior **3 Credits**
Topics in animal behavior will cover varying subdisciplines within animal behavior to offer students an in-depth learning experience. The topic selected will vary each semester and be selected by the instructor.
Prerequisite: ABEC101 or ABEC102.
Offered: occasionally.

ABEC 217 Connecting ABEC to the Wider World **3 Credits**
This course aims to introduce and explore the many ways that a degree in Animal Behavior, Ecology, and Conservation or Anthrozoology 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: once a year.

ABEC 219 Diversity of Life **3 Credits**
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.
Offered: once a year.

ABEC 220 Animal Learning **3 Credits**
This course examines major theories and principles of learning with an emphasis on applications to animal training. Topics include classical and operant conditioning, applied behavior analysis, schedules of reinforcement, extinction, shaping, chaining, generalization and discrimination, and ethics in behavior modification. Lab required.
Prerequisites: ABEC 101 & ABEC 102. **Corequisite:** ABEC 220L.
Offered: once a year.

ABEC 220L Animal Learning Lab **1 Credit**
Required animal learning lab that emphasizes practical animal training.
Prerequisites: ABEC 101 & ABEC 102. **Corequisite:** ABEC 220.
Offered: once a year.

ABEC 250 Zoo Animal Husbandry **1 Credit**
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: Every other year.

ABEC 251 Zoo Animal Management **3 Credits**
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: once a year.

ABEC 300 Research Participation no credit **0 Credits**
Recognition for ABEC research assistants, does not carry any credits.
Restriction: permission of instructor.
Offered: every semester.

ABEC 301 Research Participation (credit) **1 Credit**
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 320 Applied Dog Behavior **3 Credits**
Application of domestic dog behavior and learning theory principles to dog training. Emphasis is on common dog behavior issues and humane solutions to address them. In this experiential learning course, students will create training plans and participate in hands-on training activities with dogs. Lab required.
Prerequisite: ABEC 220. **Corequisite:** ABEC 320L.
Offered: once a year.

ABEC 320L Applied Dog Behavior Lab **1 Credit**
Application of domestic dog behavior and learning theory principles to dog training. Emphasis is on common dog behavior issues and humane solutions to address them. In this experiential learning course, students will create training plans and participate in hands on training activities with dogs. ABEC 320 lecture required.
Prerequisite: ABEC 220. **Corequisite:** ABEC 320.
Offered: once a year.

ABEC 332 Animal Welfare **3 Credits**
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. Emphasis is on communicating welfare information to a variety of audiences to encourage change.
Prerequisite: ABEC 101 & ABEC 102.
Offered: every other year.

ABEC 333 Conservation Behavior **3 Credits**
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: once a year.

ABEC 335 Conservation Education **3 Credits**
This course examines the role of education within the conservation movement, drawing on theories of learning and pedagogical instruction that are relevant in formal and informal settings (schools, zoos, aquariums, wildlife refuges, parks, etc.) as well as in community outreach programs.
Prerequisites: ABEC 101 & ABEC 102.
Offered: every other year.

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: every other year.

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 201.
Fulfills College Core: Advanced Writing-Intensive
Offered: once a year.

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 or BIO 111 & BIO 112.
Offered: every other year.

ABEC 341L Urban Ecology Lab **1 Credit**
Optional laboratory for ABEC 341 (Urban Ecology). 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, and explore the connection between social and ecological systems in Buffalo.
Prerequisites: ABEC 101 & ABEC 102 or BIO 111 & 112. **Corequisite:** ABEC 341.
Offered: every other year.

ABEC 345 Herpetology **3 Credits**
This course will explore the diversity, evolutionary relationships, ecology, behavior, and conservation of reptiles and amphibians.
Prerequisite: ABEC 101 & 102 or BIO 111 & BIO 112.
Offered: every other year.

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: ABEC 101 & 102 or BIO 111 & BIO 112. **Corequisite:** ABEC345.
Offered: every other year.

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: ABEC 101 and ABEC 102.
Offered: every other year.

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 & ABEC 102 or BIO 111 & 112.
Offered: occasionally.

ABEC 348 Wildlife & Climate Change **3 Credits**
Explore the intricate relationship between climate change and the behavior of wild animals. This course will first focus on a deeper understanding of the ecological and chemical processes that have led to climate breakdown. We will then delve into the significant impact a changing climate has on the behavioral and physiological adaptations of a wide variety of animal species.
Prerequisite: ABEC 101 & 102 OR BIO 111 & 112 OR BIO 111 & 113.
Offered: fall of even-numbered years.

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 $250 and $450. Course may be taken more than once for credit.
Prerequisite: ABEC 101 or ABEC 102.
Offered: once a year.

ABEC 360 Observational Research Methods **4 Credits**
Study of the principal procedures used in observational animal behavior research. Involves the conduct of independent research project at the Buffalo Zoo, from formulation of hypothesis through presentation of results. Statistical analysis of data is a key component of the class, and students are expected to have completed their statistics requirement. This is a blended online and face-to-face class.
Prerequisites: ABEC 101, ABEC 102, & one of the following: MAT 131, MAT 141, or PSY 201.
Fulfills College Core: Advanced Writing-Intensive
Offered: every other year.

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.
Offered: every other year.

ABEC 402 Desert Conservation **1 Credit**
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 **1 Credit**
This field course provides an in-depth look at the ecology of tropical ecosystems and issues associated with their conservation. During an immersive field experience in Belize, students will study the ecology of tropical forest and savannah ecosystems, learn about conservation issues that impact tropical wildlife species and local communities, and conduct field research. Additional fee required will cover all travel costs. Please contact the course instructor for current fees.
Prerequisite: ABEC 101 or ABEC 102 or BIO 111.
Offered: once a year.

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: occasionally.

ABEC 491 Internship 1 **3 Credits**
Internship in an 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. Student must have junior or senior standing, a minimum GPA of 2.0 in the major, a positive recommendation from a faculty member, and a completed & approved internship application.
Prerequisites: ABEC 101 and 102, or ANZ 101.
Offered: every fall & spring.

ABEC 492 Internship 2 **3 Credits**
Internship in an 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, and a completed & approved internship application.
Offered: every fall & spring.

ABEC 495 Independent Research **3 Credits**
Independent project conducted under the supervision of a faculty member. This advanced research opportunity is open to students who have completed at least one full year of research and is by invitation from their research professor. Students enrolled in independent research are expected to complete a project culminating in a manuscript or conference presentation.
Prerequisites: ABEC 101 & ABEC 102. **Restriction:** permission of instructor.
Offered: occasionally.