

# Zoology (ZO)

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## ZO 233 Human-Animal Interactions (3 credit hours)

This course is designed to explore the relationship humans share with other animals and nature. We will study the early history of animal domestication and the influence of animals on human culture and religion. We will also explore our relationships to animals as pets, food, research subjects, and wildlife. All subjects will be covered through interaction with quest speaker, assigned readings, case studies, and class discussion.

*GEP Interdisciplinary Perspectives*

*Typically offered in Fall and Summer*

## ZO 250 Animal Anatomy and Physiology (4 credit hours)

Roles of physical laws, environmental challenges, and evolutionary history in shaping animal structure and function. Selected examples from invertebrates and vertebrates. Laboratory in anatomy and physiology, hypothesis generation and testing and data analysis and presentation.

Prerequisite: C- or better in BIO 183

*Typically offered in Fall only*

## ZO 317 Primate Ecology and Evolution (3 credit hours)

A comprehensive survey of the behavior, evolution, and ecology of nonhuman primates. Special emphasis will be placed in the evolution of cognitive abilities, social systems, and behavioral patterns that are unique to primates, including the evolution of language. Topics include primate taxonomy, evolution of the extant primates, geographic distribution, social behavior, reproductive behavior and strategies, parental behavior, communication, and cognitive. Classes will consist of interactive lectures, films, and class discussions.

Prerequisite: C- or better in BIO 181 & BIO 183, and one of the following courses: ANT 251, BIO 212, BIO 240, BIO 245, BIO 250, BIO/PB 330, BIO 350, BIO/PB 360, BIO 410, BIO 422, BIO 424, or BIO 488

*Typically offered in Spring only*

## ZO 333 Captive Animal Biology (3 credit hours)

This course serves to introduce interested students to historical and current captive animal conservation efforts. We will discuss in detail a variety of issues essential to the management of wild animals in a captive setting including ethics, nutrition, reproduction, behavior, and population management.

Prerequisite: C- or better in BIO 181 and one of the following (BIO 140 or 250 or 260 or 350 or NTR 301 or ANS 150 or 205 or GN 311)

*Typically offered in Spring only*

## ZO 334 Captive Animal Biology Field Laboratory (2 credit hours)

This laboratory course serves to introduce interested students to today's captive animal conservation efforts from the perspective of NC facilities on the front lines. Through the lens of these nearby institutions, we will investigate in detail a variety of factors essential to the management of wild animals in a captive setting. We will take topics (history, population management, genetics, nutrition, education, conservation) from the lecture course and expand them as we focus on challenges unique to these local captive facilities. While some activities will take place on campus, a number of off-campus field trips are required, including one 3-day laboratory at North Carolina Zoo. We will return to campus most days within the scheduled time frame, however students should plan for the possibility that labs may go overtime on some occasions.

Prerequisite: C- or better in BIO 181; Co-requisite: ZO 333; Sophomore standing and above.

*Typically offered in Spring only*

## ZO 350 Animal Phylogeny and Diversity (4 credit hours)

Phylogenetic history and adaptive radiation of animals; contrast of environmental determinants of biodiversity in tropical and polar regions; modern approaches to phylogeny; role of humans in influencing biodiversity. Students may not receive credit for

Prerequisite: A grade of C- or better in BIO 181 and sophomore standing. Credit is not allowed for both ZO 350 and ZO 402/

*Typically offered in Spring only*

## ZO 402 Invertebrate Biology (4 credit hours)

Over 90% of all animals are invertebrates, and many invertebrate species have proven extremely useful in medical and research applications. This course will survey invertebrate groups or clades (excluding the Protista), and will emphasize their functional biology, phylogeny, ecology, behavior, and use as models in research. Lab will emphasize an experimental approach and will involve work primarily with live material. Students may not receive credit for both ZO 402 and ZO 350.

Prerequisite: A grade of C- or better in BIO 181 and BIO 183. Credit is not allowed for both ZO 402 and ZO 350.

*Typically offered in Fall only*

## ZO 410 Introduction to Animal Behavior (3 credit hours)

Studies in animal behavior in vertebrates and invertebrates, focusing on the mechanisms and evolution of animal behavior. Topics include neural, hormonal, and genetic bases of behavior; foraging; anti-predator defenses; mating systems and sexual selection; social behavior; communication; parental care; territoriality and habitat selection.

Prerequisite: C- or better in BIO 181 and BIO 183

*Typically offered in Fall and Summer*

## ZO 486 Capstone Course in Zoology (3 credit hours)

Topical problems in zoology. BIO 486 provides a challenging opportunity for students to integrate and apply knowledge and skills gained from their major studies. Emphasis will be placed on collaborative learning and effective, professional communication. Topics and instructors will vary from semester to semester. Priority will initially be given to seniors in the SZO curriculum; other students with the necessary prerequisites will be admitted on a space available basis.

Prerequisite: C- or better in BIO 250, BIO/PB 360, and one of the following: BIO 350 or BIO 402/403 or GN 311 or ST 311.

*Typically offered in Fall and Spring*

**ZO 512 Animal Symbiosis** (3 credit hours)

Symbiotic associations of animals including mutualism, commensalism and parasitism. The morphological, physiological, behavioral and ecological adaptations of symbionts and the complex interactions between partner species.

Prerequisite: 12 hrs. of biology and zoology

*Typically offered in Spring only*

**ZO 513 Comparative Physiology** (3 credit hours)

Comparative study of the organ systems of vertebrates and physiological processes involved in maintaining homeostatic state. Various compensatory mechanisms employed during environmental stress included.

Prerequisite: ZO 421

*Typically offered in Fall only*

**ZO 522 Biological Clocks** (3 credit hours)

The anatomy, physiology and development of biological clocks in a variety of organisms, including humans. Required readings in primary literature.

Prerequisite: Graduate standing

*Typically offered in Spring only*

**ZO 524/PHY 524/PO 524 Comparative Endocrinology** (3 credit hours)

Basic concepts of endocrinology, including functions of major endocrine glands involved in processes of growth, metabolism and reproduction.

Prerequisite: BIO 421 or PO 405

*Typically offered in Spring only*

**ZO 542 Herpetology** (3 credit hours)

The biology of the amphibians and reptiles: systematics, life history, anatomy, behavior, physiology and ecology.

Prerequisite: ZO 250 and ZO 421

*Typically offered in Spring only*

**ZO 553/FW 553 Principles Of Wildlife Science** (3 credit hours)

The principles of wildlife management and their application studied in the laboratory and in the field.

Prerequisite: BIO 260 or BIO/PB 360

*Typically offered in Spring only*

**ZO 582/ENT 582 Medical and Veterinary Entomology** (3 credit hours)

The morphology, taxonomy, biology and control of the arthropod parasites and disease vectors of man and animals. The ecology and behavior of vectors in relation to disease transmission and control.

Prerequisite: ENT 425 and ZO 315

*Typically offered in Spring only*

**ZO 790 Special Topics** (1-6 credit hours)

**ZO 791 Topics In Animal Behavior** (3 credit hours)

Intensive examination of selected aspects of animal behavior and their relationship to physiology, ecology and other biological fields. May be repeated for credit when topic changes.

Prerequisite: Graduate standing

*Typically offered in Fall only*

**ZO 829 Special Topics** (1-6 credit hours)

A directed individual investigation of a particular problem in zoology, accompanied by a review of the pertinent literature. A maximum of three hours allowed toward master's degree.

Prerequisite: Twelve hours ZO

*Typically offered in Fall and Spring*