

University of Arkansas – Fort Smith
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General Syllabus

BIOL 4854 Ornithology

Credit Hours: 4

Lecture Hours: 3

Laboratory Hours: 3

Prerequisite: 12 hours of Biology including BIOL 2003 Introduction to Cell Biology

Effective Catalog: 2018~2019

I. Course Information

A. Catalog Description

Covers the taxonomy, morphology, physiology, behavior, ecology, and conservation of birds, with special emphasis on field identification of birds of Arkansas. Laboratory will primarily entail field work.

B. Additional Information

This course is intended to serve as an elective for Biology majors and will particularly be recommended for those pursuing a field biology program. Heavy emphasis on field work is placed in the lab component of the course.

II. Student Learning Outcomes

A. Subject Matter:

Upon completion of this course, the student will be able to:

1. Classify the common birds of Arkansas in lab and field.
2. Inspect the various bird species with the habitats they live in.
3. Develop a firm grasp of the basic field techniques involved in bird studies.
4. Categorize basic bird biology
5. Articulate the problems faced by various bird species in face of continued human habitat alterations.
6. Determine various issues in conservation biology that pertain to the management of threatened or endangered bird species.

B. University Learning Outcomes:

Ornithology enhances student abilities in the following areas:

Communication Skills (written and oral)

Students will effectively write research paper(s) based on experiments in ornithology, and effectively communicate orally their experimental results to the class.

Analytical Skills

Quantitative Reasoning: Students will perform experiments and draw conclusions based on their findings. Students will interpret data and read scientific graphs in original scientific literature, and collect and analyze data in laboratory in order to compose their own scientific research paper. Students will represent mathematical/ statistical information symbolically, visually, numerically and verbally, and will interpret models and data in order to draw inferences.

III. Major Course Topics

- A. Introduction to Ornithology
 - 1. Origins and diversity of birds
 - 2. History of birds
- B. Systematics and taxonomy of birds
 - 1. species and speciation
 - 2. classification and major orders
- C. Avian anatomy
 - 1. skeletal adaptations for flight
 - 2. other anatomical adaptations
 - 3. senses, brains, intelligence
 - 4. feathers
- D. Ancestry and evolution of birds
 - 1. Theropod origins of birds
 - 2. Other theories of avian origins
- E. Bird migration
 - 1. navigation
 - 2. experimental and field studies on migration
 - 3. case studies
- F. Avian behavior
 - 1. bird songs
 - 2. studies of bird songs using spectrograms
- G. Nesting and parental care
 - 1. Polygyny and polyandry
 - 2. brood parasitism
 - 3. cooperative breeding
 - 4. nests and incubation; altricial vs. precocial nestlings
- H. Bird conservation and endangered species management
 - 1. Threats
 - 2. Conservation by design
 - 3. Endangered species
- I. Field identification of birds
 - 1. common birds of Arkansas

