

**ZOO 3930
Ornithology
Spring 2019
3 credits**

Instructor: Dr. Anna Forsman

Email: anna.forsman@ucf.edu

Office: Bio 414

Office hours: Tuesday and Thursday, 4:30-5:30pm (or by appointment)

Course Times and Location: Tuesday and Thursday, 3:00-4:20pm, Bio 209

Course Description

Birds have captured human interest and imagination for generations. These fascinating animals captivate us with their broad diversity of ornamentations, vocalizations, and behaviors. Famous bird enthusiasts include Charles Darwin, David Attenborough, John James Audubon, Ernst Mayr, Niko Tinbergen, and Konrad Lorenz. Birds have inspired art and poetry and are featured prominently in television and movies, whether you realize it or not. Birds are mostly diurnal creatures and so they are easy to observe even with minimal time spent outdoors. No wonder that bird watching has become such a popular hobby around the world! But as biologists, we are interested in getting to know these charismatic animals on a deeper level. Ornithology, the study of bird biology, has a long and rich history that is often intertwined with other disciplines, including evolutionary biology and psychology. In this course we will learn how both modern birds and their study came to be. We will learn about the anatomical and physiological specializations that make birds unique and allow them to more efficiently utilize the resources and conditions encountered in their environments. Birds are often admired for their beautiful plumages and intricate songs, both of which play important roles in mate choice and other social interactions. We will cover these topics in depth with the aid of a broad range of multimedia to allow us a glimpse into the lives of birds from around the world. An important characteristic of many, but not all, bird species is their ability to fly. Many birds partake in incredible feats of long distance flight to move between wintering and breeding grounds. In this course we will learn about such annual cycles, including migration and molt. In summary, the course objective is to provide a comprehensive introduction and appreciation for the evolutionary history, diversity, ecology, biology, and behavior of birds. Class meetings are structured to combine lecture and hands-on activities, making use of the UCF bird collection, audio and video from the Cornell Lab of Ornithology, and the local Florida birds waiting just outside our own Biology building.

Course Objectives

- To develop working knowledge of the global diversity of bird families and orders, including their distributions, ecologies, and behaviors; also local species common to central Florida
- To understand the evolutionary history and systematics of modern birds
- To gain hands-on experience with birds through interactions with museum specimens, multimedia, and field experiences
- To understand the anatomical and physiological adaptations that distinguish birds from other animal taxa
- To understand the great diversity of avian behaviors, including migration and dispersal, communication, resource acquisition, mate selection, and parental care
- To maintain a field notebook, documenting species encounters and behaviors observed in the field

Required Materials

Lovette, I.J. and Fitzpatrick, J.W. 2016. *Handbook of Bird Biology (Cornell Lab of Ornithology)*, 3rd edition.

- Other readings will be made available via Webcourses throughout the semester
- Notebook to use as field notebook

Webcourses

I will be maintaining a course website through UCF Webcourses that will be updated throughout the semester (<https://webcourses.ucf.edu>). This is where additional reading materials, announcements, and grades will be posted. Please check the course website on a regular basis.

Course Policies

- As your instructor, it is my responsibility to create a positive learning environment for all students. Student feedback is essential to facilitate this goal and so I encourage students to contact me immediately as questions or concerns arise. If there are special considerations that may affect your participation or learning experience in any way, please meet with me at the start of the semester to talk about any necessary adjustments; I also suggest that you to contact SAS (Ferrell Commons 185, (407)823-2371, sas@ucf.edu) for more information about academic accommodations at UCF.

Course Policies (continued)

- I expect that students and instructor will show respect for each other and for the course materials. Please contact me if you have any concerns to this effect. We are very fortunate to have access to an ornithology collection at UCF. Many of these specimens were collected during the early to mid 20th century represent irreplaceable data points for this period in time. Students will be trained in proper handling and care of specimens and are expected to follow these guidelines when working with specimens.
- Attendance and class participation are key to getting the most out of this course and will, thus, account for 10% of your final grade. During class meetings, we will be interacting with bird specimens that will not be readily accessible outside of class. We will also spend time observing birds together in the vicinity of the Building. For some of these activities, there will be graded worksheets for students to complete and turn in at the end of that day's class (count towards participation).
- Cell phones and other electronic devices, not used for note-taking, should be silenced and put away at the start of lecture. Please be respectful of the learning environment of those around you. If you need to make/take a phone call or text during lecture, please step outside so that I don't have to ask you to do so.
- Exam and class activity make-ups will not be given without valid documentation provided to the instructor prior to the absence or within 24 hours of the missed assessment. No late assignments will be accepted without prior arrangement with the instructor. In-class assignments are due at the end of the class period in which they are assigned.
- Plagiarism, cheating, or any other form of academic dishonesty will not be tolerated. Please submit your own work and make sure to cite any references appropriately. Any instances of academic dishonesty will result in a zero for that particular assignment/exam; depending on the severity, such instances may result in an F for the course and referral to the Office of Student Conduct for further action. For further clarification, please see the instructor and review the UCF Golden Rule.

Grading

Grades will be assigned according to the following scale:

A: 90-100; B: 80-89; C: 70-79; D: 60-69; F: <60

The final grade for this course will be based on nine components:

Assessment	% of final grade
Attendance & Participation	10%
Birds in the News (2 entries)	5%
Bird ID Quizzes	5%
Field Notebook	10%
Semester Project	10%
Exam 1	15%
Exam 2	15%
Exam 3	15%
Final Exam	15%

1. **Attendance and Participation (10%)** will be based on your attendance and completion of in-class activities including graded worksheets, discussions, and surveys. There will be three Birds of the World (BOW) modules throughout the semester. The objective of these modules is for students to learn about the modern bird orders and families by interacting with museum specimens and multimedia materials. In addition, each week we will introduce a new set of common local bird species (5-10 per week). The material presented in these specimen-based lab modules will be covered in the midterm and final exams. Students are responsible for knowing the common and scientific names for local bird species as well as the families and orders to which they belong. Students will also be responsible for knowing the 39 orders of birds covered during BOW.
2. Throughout the semester, you will have the opportunity to test your bird identification skills through **Bird ID Quizzes (5%)**. Most of these quizzes will be administered through Webcourses, with occasional specimen-based quizzes given during class time. Students are responsible for knowing the common and scientific names for local bird species as well as the families and orders to which they belong.
3. **Field Notebook (10%)**. Students are expected to maintain a field notebook, listing and describing observations of birds throughout the semester. This notebook should contain a minimum of **ten entries** describing observation periods of at least **20 minutes** outside of class time. Any in-class bird watching should also be recorded in the field notebook, but do not count toward the 10-entry minimum, which should be independent observations (but weekend bird-watching field trips count!). Field notebooks will be collected and graded two times during the semester to allow for instructor feedback. A minimum of five independent entries should be recorded at the time of first notebook collection.

4. Each student will complete an independent **Semester Project (10%)**, which includes a 2-3 page paper focusing on one bird taxon selected by the student (approved by the instructor to avoid overlap). Students will write about an aspect of the species' biology that they find particularly interesting (e.g., parental care), based on published research from the primary literature. A comprehensive description of this assignment will be available through webcourses.

5. There will be three midterm **Exams (15% each)** and one **Final Exam (15%)**. Midterm exams will include material covered since the preceding exam and up to the present exam. The final exam will be cumulative. Exam questions will be drawn from lecture, reading materials, BOW modules, and other class activities.

Voluntary Field Trips

Throughout the semester, there will be opportunities for students to participate in voluntary field trips to the Orlando Wetlands and surrounding areas to go bird watching. These daytime trips will be scheduled during weekends. They are not mandatory, nor do they count for any additional credit towards the class. But I highly encourage student participation! The Orlando Wetlands offers amazing birdlife, especially during the winter and early spring. It is also a great opportunity to work on your identification skills alongside experienced bird watchers, while also logging entries in your field notebook. We have a class set of binoculars, spotting scopes, and field guides that will be available to students during these field trips. Sign up through webcourses!

Semester Schedule

****Please keep in mind that this schedule of lecture topics will likely change as we work our way through the semester****

Week	Date		Topic
1	7-Jan	Mon	Introduction. Why study birds?
	9-Jan	Wed	History of Ornithology
2	14-Jan	Mon	Avian diversity and classification
	16-Jan	Wed	Evolution and Systematics I. Origin of birds
3	21-Jan	Mon	Evolution and Systematics II. Specimens, fossils, and DNA
	23-Jan	Wed	What makes birds special? Feathers, plumage, and molt
4	28-Jan	Mon	Birds of the World I
	30-Jan	Wed	Anatomy I. Flight
5	4-Feb	Mon	Anatomy II. Feet, feeding, and vision
	6-Feb	Wed	Exam 1.
6	11-Feb	Mon	Physiology I. Respiration and digestion
	13-Feb	Wed	Physiology II. Thermoregulation, brains and senses

Semester Schedule (continued)

Week	Date		Topic
7	18-Feb	Mon	Breeding Biology I. Reproduction and the avian egg
	20-Feb	Wed	Breeding Biology II. Incubation and development
8	25-Feb	Mon	Breeding Behavior I: Sexual selection
	27-Feb	Wed	Breeding Behavior II: Parental care and foraging
9	4-Mar	Mon	Birds of the World II
	6-Mar	Wed	Social Behavior 1.
10	11-Mar	Mon	Spring Break
	13-Mar	Wed	Spring Break
11	18-Mar	Mon	Social Behavior 2.
	20-Mar	Wed	Exam 2.
12	25-Mar	Mon	Communication I. Vocal, visual, and olfactory
	27-Mar	Wed	Migration and Dispersal 1.
13	1-Apr	Mon	Migration and Dispersal 2.
	3-Apr	Wed	Bird Populations and Demography
14	8-Apr	Mon	Life History
	10-Apr	Wed	Birds of the World III
15	15-Apr	Mon	Bird Communities
	17-Apr	Wed	Conservation
16	22-Apr	Mon	Exam 3.