

Ornithology (BIOL 333 & 333L)
TR 7:30-10:30
Pond Station
Field Station at Dixie

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Texts:

Ornithology (Frank B. Gill, 3rd Edition)

A Guide to Field Identification: Birds of North America (Golden Guide, Robbins et al.)

Peterson Field Guide to Bird Songs of Eastern and Central North America (audio CD).

Office hours: by appointment, or drop by

About the course: Ornithology is the study of birds, including not only the study of bird diversity, but also the comparative study of avian anatomy, physiology, behavior and ecology. As we'll see, birds are also extremely well-suited for field study for a number of reasons, so we will learn many techniques for the study of birds in this class. Scientists are not alone in their love of birds; birds have captured the poetic imagination for millennia, singing and flying their way into poems and songs and metaphor. We will pay particular attention to the flight and voices of birds in this course.

Specific course goals:

To learn about **bird diversity**, including distinguishing characteristics of major groups and comparative anatomy, physiology, behavior and ecology;

To learn to **connect levels of analysis in biology** – that is, using birds as a model, learn how genetics affects physiology, how physiology affects behavior, how behavior and physiology affect ecology, etc.

To understand how to **ask and answer questions** about birds in a scientific context;

To learn the **characteristics and natural history** of local species;

To acquire **skills for identifying and observing** new species, wherever you end up after the CofC;

To **notice** birds where you never noticed them before; to be **aware** of the birds in your world and to be aware of how your behavior affects the birds around you.

About the schedule: While officially lecture is on Tuesday and lab is on Thursday, this schedule is an artifact of the need to have formal schedules. On average, yes, we will spend 3 hrs/week in lab activities and 3 hrs/week in lecture. But we will engage in the 'lab activities' (most of which will be in the field) when the weather is appropriate, and come inside for lecture when it is not. We may also 'bank' extra lecture time early in the semester (when weather is generally poor) so that we have more time to be in the field later in the spring (when weather tends to be better and when migration begins).

About Attendance: **Active participation in laboratory activities is essential; attendance is mandatory but not sufficient.** We typically begin fieldwork early, and some of our field trips require a significant drive. We will begin at the scheduled time. Mistakes happen – anyone could have unforeseen difficulties with the commute or oversleep – so a small number of missed lab activities will not be penalized. **Any more than 3 unexcused absences from lab activities (typically the first 1.5-2hrs of the class period) or field trips will result in a letter-grade decrease in your final grade for each**

additional absence. Being sick *is* an excused absence, but please note that “missed my ride” is not.

I do not take attendance in lectures; you are adults and can decide for yourselves how to best use your time. You are entirely responsible for all material missed in class or lab, however, regardless of the reason for your absence.

About Oaks: I use Oaks for submitting assignments, for providing access to content or other materials not found in the texts, and for announcements. Please note that I do not post lecture notes or PowerPoint files online. Learning to listen, process and take note of critical information are life-skills you will need to develop; moreover, studies have shown that students actually learn *less* if they have pre-printed slides. Actively engaging your brain during lecture turns out to be pretty important. That said, if you ever feel as if you missed something important on a slide, feel free to make an appointment; I’m happy to allow you to review slides at your leisure.

Exams & Assignments:

There will be **two in-class exams**, **two lab exams**, and a **final exam**. The final will contain both **cumulative** and “recent material” portions. *Be warned that the cumulative portion of the final exam will be more than a re-hashing of previous material; in particular, you will be asked to synthesize taxonomic material from the previous two exams.* Exams will be primarily “short-answer” in format; lab exams may be short answer and/or multiple choice. In addition to these exams, there will be a bird **identification exam** (at least partially in the field).

Finally, there are **three assignments:** the **Taxonomy Assignments**, the **Group Projects**, and the **Review Paper**.

Taxonomy Assignments – Twice over the first half of the semester, you will research an assigned group or groups of birds, and present these birds to the class. In essence, you will be responsible for teaching basic bird taxonomy to the class. Your oral presentation will include a basic summary of the distinguishing characteristics of this group of birds: what unites them as a group, what distinguishes the families within the group, where and how do they live, etc; you will organize and present this information to the class as an oral presentation with a supporting hand-out of the critical information. At least one week before your presentation, you will submit a draft of your presentation materials (including hand-out); you will be graded both on your draft and final presentation.

Group Projects – As a class, we will all be working on 3 projects: (1) a survey of birds at Dixie; (2) an urban/rural comparison of bird personality; and (3) an urban/rural comparison of bird window strikes. The ‘urban/rural’ comparisons will be between birds at Dixie and birds on the downtown CofC campus (main campus and Harbor Walk). Everyone will be responsible for data collection on all three projects. For data analysis and presentation, we will divide the tasks amongst the class. Your grade will be based on your contributions, not those of your classmates.

Review paper – As we’ll see, birds are model study organisms for a wide range of topics, from conservation biology to neurobiology, from foraging ecology to sexual selection. You will write one paper in this class, in which you explore an emerging area of research that involves birds. The paper will not be long, but should synthesize current research on a specific topic of your choice, and suggest new connections and/or directions for this research. In other words, this is not a ‘research summary’ in which you simply report on the findings of others; you will be using your own creative and critical faculties to provide new insights and/or propose new questions or avenues for research.

Laboratory:

The laboratory section of this class is a workshop: we will work together to learn about local bird species, to learn techniques for the study of birds, and to collect data for the Group Projects. By “work together” I mean just that: the whole lab section will help each other learn the local birds; in addition, you will work closely with 1-2 other students as **field partners**.

Most of the labs are in the field, so weather will be an issue. In many cases, we may be outside in less-than-pleasant weather, so **weather-appropriate dress is crucial**. Warm shoes that can stand a little water are a must. Err on the side of dressing too warm – even in SC, early mornings can be cold, particularly if you aren’t moving around much. Mist will make you cold and wet even on clear days. **You are adults; I’m not going to tell you how to dress, but whining is unacceptable.**

While most days will start in the field, rain or excessive cold may postpone the lab activities until later in the morning. NOTE THAT WE WILL START AT 7:30AM REGARDLESS. If the weather is bad at 7:30am, we will get some lecture out of the way so that we can get back into the field when the weather improves.

Grading:

Exams (2 ‘regular’ + final)	45%	(15% each)
Lab (taxonomy) exams	20%	(10% each)
Taxonomy Assignments	10%	(5% each)
Group Projects	10%	
Review Paper & presentation	10%	
Bird ID exam & Participation*	5%	

(*includes group field identification improvement and lab participation)

Grade scale:

93.5 – 100% A	73.5 – 78.49% C
90.0 – 93.49% A-	70.0 – 73.49% C-
88.5 – 89.9% B+	68.5 – 69.9% D+
83.5 – 88.49% B	63.5 – 68.49% D
80.0 – 83.49% B-	60.0 – 63.49% D-
78.5 – 79.9% C+	<60.0 F

Lab schedule: (Subject to change depending on availability of limited access sites, weather, recent not-to-be-missed sightings, etc. Updates will be posted to Oaks.)

As noted earlier, although Thursdays are officially “333L” days, the advantage of teaching both lecture and lab at the field station is that we are not constrained by that arbitrary schedule, and can instead work outside when the weather is suitable. The following schedule refers to activities that will occur each week; this may be on Tuesday, Thursday or both.

1/7	Introduction: Dixie Plantation/how to use binoculars/project intro
1/12, 14	Sound Lab
1/19, 21 §	Field trip and/or Group Project
1/26, 28	Taxonomy Presentations I*
2/2, 4	LAB EXAM 1*
2/9, 11	Bird capture, handling and banding
2/16, 18 §	[ok low T 8:41am] Field trip and/or Group Project
2/23, 25	Taxonomy Presentations II*
3/1, 3	LAB EXAM 2*
3/8, 10	<i>SPRING BREAK</i>
3/15, 17	[ok low T 8:17am] Field trip and/or Group Project
3/22, 24	Field trip and/or Group Project
3/29, 31	Field trip and/or Group Project
4/5, 7	Field trip and/or Group Project
4/12, 14	[good low 6:58am] FIELD ID EXAM AROUND HERE**
4/19	Presentations

Field trips TBA: Center for Birds of Prey, Pitt St. “Bridge” & Patriots Pt., ACE Basin/Bear Island NWR, Magnolia Plantation, Caw Caw, Botany Bay.

§ Draft Taxonomy materials due on Oaks by midnight (1 week before presentation)

*Taxonomy presentations will be split between Tuesday and Thursday of these weeks; Lab exams to be given on Thursdays.

**Date of Field ID Exam may change depending on weather and field trip schedules; it will be in the final weeks of the semester.

Lecture Schedule: (subject to change)

1/7	What is a bird?	
1/12	Flight: Aerodynamics 101	General Anatomy & Physiology
1/14	Flight: Wing Diversity & Flight Behavior	
1/19	Skeletal System & Feathers	
1/21	Respiration, Circulation, Metabolism	
1/26	Temperature Regulation & Water Balance	
1/28	Feeding: Morphological Adaptations & Physiology	
2/2	Feeding: Adaptive Radiations	
2/4	Foraging Behavior & Ecology	
2/9	Foraging Behavior & Ecology	
2/11	EXAM I	
2/16	Reproductive Physiology	Reproduction & Development
2/18	Reproductive Physiology	
2/23	Growth & Development: Eggs, Nests & Incubation	
2/25	Growth & Development: Post-hatch	
3/1	Parent-Offspring Behavior: Care & Conflict	
3/3	Parent-Offspring Behavior: Care & Conflict	
3/8	SPRING BREAK	
3/10	SPRING BREAK	
3/15	Parent-Offspring Behavior: Alternative Parental Strategies	
3/17	Reproductive Behavior & Migration	
3/22	Mating Systems	
3/24	EXAM II	Social Behavior & Communication
3/29	Communication: Role of Plumage	
3/31	Communication: Role of Vocalizations	
Review paper due 4/4 (in Oaks dropbox)		
4/5	Function of Song	
4/7	Production & Evolution of Song	
4/12	Social Behavior & Cognition	
4/14	Social Behavior & Cognition	
4/19	Avian Conservation: Global & Personal Issues	

FINAL EXAM: April 26, time TBA

Because TR 7:30am is an unusual class time, the Registrar did not include it in the Final Exam schedule, and I've been told to 'pick a time that works for the class'. None of you have another class TR mornings, obviously; the final exam time for TR 8am is 4/26 noon, and the final exam time for TR 9:25am is 4/26 8am. Thus sometime in the morning of 4/26 seems reasonable, but we'll discuss further in the first weeks of class.