# Syllabus
# Bio 215: Ornithology - Spring, 2012
# T-Th, 11:00 – 12:15, Science Center A155

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**Office Hours**:
Mon 1:30-2:30; Wed 9:00-11:00
- *PLEASE SIGN UP ON MY OFFICE DOOR* -
Or by appointment (contact me via email or phone to set up a time).
*If my office door is closed, just knock!*

## Course Description:

Biol 215: Ornithology 4 NS

This course will present birds both as a unique group and as representative of vertebrates. The course will emphasize adaptation, ecology, and behavior of birds, and introduce students to methods used in modern ornithology. We also will consider current views of the systematic relationships among living birds, and the evolutionary history of birds, including the debate regarding their origin in relation to dinosaurs. Laboratory sessions will meet on alternate Saturday or alternate Sunday mornings (occasionally at night), and emphasize field identification, habitat relationships, migration, and behavior. *Prerequisites*: Biol 100 (118) or Biol 102 (120) or a 5 on the AP exam. *Consent of instructor required. Enrollment Limit: 24.*

## Course Objectives:

1. To understand what birds are and how they relate to other vertebrates.
2. To learn current views of avian systematics, taxonomy, and biodiversity.
3. To understand how studies of birds provide information relevant to our understanding of a broad range of organisms.
4. To become familiar with the design of experimental and observational studies in ecology, behavior, and evolution, and to learn techniques used in contemporary ornithology.
5. To understand science as an evolving process, rather than a set of still facts
6. To become familiar with primary ornithological literature and where to find it.
7. To develop writing skills and information literacy.

## Required Texts:

Gill, F. B. *Ornithology* (3rd Edition). W. H. Freeman and Company. New York, *AND* its companion website: http://bcs.whfreeman.com/gill/default.asp?s=&n=&i=&v=&o=&ns=0&uid=0&rau=0
Other readings from the primary and review literature will be assigned to supplement Gill.

You should have a good field guide that covers all of North America, has maps near the pictures, and is up to date (e.g., National Geographic *Field Guide to Birds of North America,* 6th edition, but several others meet these criteria). Consult with me if you have questions.

## Attendance Policy:

Because this course involves class discussion and lectures on material that may not appear in your text book, you should make every effort to attend all class meetings and field trips that are scheduled during class time. If you expect to be absent for a class period, consult with me as soon as possible beforehand.

**Honor Code:**

As members of the Oberlin College Community, each of us is expected to adhere to the Honor Code. Please familiarize yourself with this code. You can view it online in your Blackboard site: Log on to Blackboard, scroll to the bottom of the page and click on "Honor System".

The following text was taken from The Honor Code and The Honor System Charter:

> At the end of each academic exercise students shall write in full and sign the Honor Pledge: "I affirm that I have adhered to the Honor Code in this assignment."
>
> If a student does not follow the appropriate procedure, faculty members have the option of withholding the grade until the student writes the Honor Pledge correctly, although they may not penalize students for an oversight.

*You will need to pledge the honor code on every assignment that you turn in (exams, taxonomy reports, research paper, self-directed field-ID lists, field quizzes, etc.).*

**Blackboard and Communication:**

Most class materials, including updated syllabus, guidelines to the assignments, laboratory information, supplemental reading list, PowerPoint lectures, taxonomy reports, and exam keys will be posted on Blackboard.

Weather can be a problem for labs and we may have to cancel some excursions due to bad weather. Please check your email for messages the night before lab for information about the plan when the weather is iffy.

**Lecture:**

Most class periods will consist of interactive lecture. I expect you to actively participate by asking and answering questions and by discussing prompts with your classmates. I post all PowerPoint slides on Blackboard, but much of what we discuss in lecture is not on the slides. Occasionally we will work with specimens or watch videos during class time in lieu of lecture. Many class periods will begin with one or two short Taxonomy Reports, most of which will be presented by students.

**Dissections and Specimens:** We will perform dissections on birds in class and will use many skeleton and mounted skin specimens. The birds we will dissect and some of the skeletons were found dead or died in a rehab facility because they could not be saved - that is, none of those birds were killed so that we could dissect them. Most of the older skeleton and skin specimens (taxidermic mounts) were collected for the Oberlin College Museum in the late 1800s and early 1900s by shotgun. Please see me if immediately you have any questions.

**Lab:**

Most labs emphasize field identification skills as well as migration patterns and habitat associations and most lab exercises consist of group field trips or self-directed field ID exercises. A couple of labs will have short or long "inside" components during which we will analyze specimens and do other work. We also will include one or two exercises designed to demonstrate ornithological field techniques, weather permitting. Labs will begin at 8:30 am during the first module of the course. They may begin earlier during the second module. Start times for labs during the second module will be announced in class. ***If you are not at the designated meeting place when it is time to depart campus, we will leave without you.***

DRESS WARMLY AND APPROPRIATELY FOR LABS!!! We will likely encounter freezing temperatures, gale-force winds, muddy ground and rain during at least some of our trips (maybe all of them!). Please dress appropriately. *You also should bring snacks, water, and a lunch, as lab lasts for 6 hrs.*

**Grading:**

Your grade for the course will be based on three exams (the final having a comprehensive component), an Avian Taxonomy Assignment consisting of written and oral parts, and a research paper comprising a critical review of current ornithological literature on a specific topic. Exam format will be mostly short answer and short essay. Grades from the lab portion of the course will stem from field identification quizzes (ID by sight and sound), self-directed field ID exercises, a quantitative analysis of wing skeletal morphology, and a final species ID exam based on photographs of species that we encounter in the field. I will post guidelines explaining the objectives and requirements of each assignment, as well as what I will consider when grading them, on Blackboard.

The number of points accrued from field quizzes is impossible to predict because the quizzes are dependent on the cooperation of the birds. I'll shoot for 3 to 7 quiz birds per field trip, but we may not reach that many. I will scale the scores from quiz birds to a total of 30 points. Thus, if we are able to get a lot of quiz birds, each will be worth a small fraction of the quiz-bird-grade. But if the birds don't cooperate and we only get a few, then each bird will be worth a larger proportion of the grade.

| Assignment | Total Points |
|---|---|
| Lecture | |
| Exam 1 | 100 |
| Exam 2 | 100 |
| Exam 3 with comprehensive section | 125 |
| Avian Taxonomy Assignment | 35 |
| Research Paper | 100 |
| *Subtotal* | *460* |
| Lab | |
| Field Quizzes (10-20 quiz birds, pro-rated for a total of 30 pts) | 30 |
| Self-directed field ID (n = 2, 15 pts each) | 30 |
| Bones project | 30 |
| Comprehensive Final ID Exam (75 pts) | 75 |
| *Subtotal* | *165* |
| Total points | 625 |

**Use of live birds in this course:**

The procedures using vertebrates in this course have been reviewed and approved by Oberlin's Institutional Animal Care and Use Committee (IACUC). Inquiries related to the use of animals at Oberlin College can be directed to me, Keith Tarvin, and/or to the Chair of the IACUC, Joyce Babyak, Deans' Office, Oberlin College < joyce.babyak@oberlin.edu>.

**Calendar for Bio 215 & 216 - Ornithology and Ornithology Lab**

| Wk | Dates | Days | Topic | Readings from Gill, etc (*other authors in italics*) | Bird Orders and Family Groups | Labs |
|---|---|---|---|---|---|---|
| 1 | Feb 7-9 | T<br>R | Course Intro<br>Flight and Ecomorphology | -Chap 1; pp52-57<br>-Chap 5 to p133; *Hertel & Balance 1999* | ---<br>--- | Feb 11, 12 - Carlisle Reservation. Library exercise. Self-directed Field ID |
| 2 | Feb 14-16 | T<br>R | Finish Flight; Begin Plumage<br>Feathers | -Chap 4; *Hedenström 2003*<br>-*Handouts* (get in class) | -Palaeognathae; Galliformes<br>-Anseriformes; Sphenisciformes | |
| 3 | Feb 21-23 | T<br>R | Finish Feathers. Begin Reduction and Centralization<br>Discuss Poore et al; Mastery of Flight<br>*annotated biblio due* | -Pp133-140<br>-*Poore et al. 1997* | -Procellariiformes; Gaviiformes<br>-Podicipediformes; Phoenicopteriformes | Feb 25, 26 –Bones and Skeletons. Pp133-140; Figs 1.3, 1.5, 1.13, 2.5, 3.8; *Handouts* |
| 4 | Feb 28 - Mar 1 | T<br>R | Systematics<br>Origins | -Chap 3; *Hackett et al. 2008*<br>-Chap 2 | -Ciconiiformes; Pelicans & allies<br>-Diurnal birds of prey; Cranes, rails and allies | |
| 5 | Mar 6-8 | T<br>R | Finish Origins<br>EXAM 1 | -*Zhou 2004*<br>--- | ---<br>--- | Mar 10, 11 - Pickerel Creek Marsh |
| 6 | Mar 13-15 | T<br>R | Thermoregulation<br>Water and Salt Balance; Gas exchange | -Chap 6 to p164; *Arad et al. 1989*<br>-Pp 173-179 | -Charadriiformes; Pteroclidiformes<br>-Columbiformes; Psittaciformes | |
| 7 | Mar 20-22 | T<br>R | Feeding & Digestion<br>Finish Physiology<br>*Rough draft due* | -Pp 164-173<br>--- | -Opisthocomiformes Musophagiformes;<br>--- | Week of 19 Mar – Self-directed Field ID |
| 8 | Mar 27-29 | -- | Spring Break -- No class | | | |
| 9 | Apr 3-5 | T<br>R | Mechanics of Reproduction<br>Eggs and Nests | -Chap 14<br>-Chap 15 | ---<br>-Cuculiformes; Strigiformes | Apr 7, 8 – The Arb. American Robin nest searching /watching; *Continue on own next week*. |
| 10 | Apr 10-12 | T<br>R | Parental Care<br>Cuckoldry; Brood Parasitism | -Chap 16<br>-Pp 359-365; 377-385 | -Caprimulgiformes; Apodiformes<br>-Coliiformes; Trogoniformes | |
| 11 | Apr 17-19 | T<br>R | EXAM 2<br>Migration | ---<br>-Chap 10 to pg 295 | ---<br>-Rollers, Kingfishers & allies; Piciformes; | Apr 21, 22 - Sandy Ridge |
| 12 | Apr 24-26 | T<br>R | Navigation<br>Integrating the Annual Cycle | -Pp 295 – 306<br>-Chap 9 | -Passeriformes (overview)<br>-NZ Wrens & Suboscines; Corvoidea | |
| 13 | May 1-3 | T<br>R | Brain and Senses<br>Vocalizations<br>*final paper due* | -Chap 7 to pg 206<br>-Chap 8 | -Meliphagoidea; Muscicapoidea<br>--- | May 5, 6 – Vermilion River Reservation |
| 14 | May 8-10 | T<br>R | Cognition<br>Finish Cognition | -Pp 206-214<br>-*Marino 2005; Sol et al. 2005 (read Marino first)* | -Certhioidea; Sylvioidea<br>-Passeroidea; Nine-primaried oscines | |
| | May 16 | W | FINAL EXAM (2:00 pm) | | | Final Lab Exam (time TBA) |