

## **Animal Ecology 363: Natural History of Birds Spring 2006 Course Syllabus**

**Instructors:** Lisa Schulte (Asst. Prof.) and Paul Skrade (Grad. Teaching Assistant)  
Office: 142 Science II Office: 43 Science II  
Phone: 294-7339 Phone: 294-8419  
Email: lschulte@iastate.edu Email: skradepa@iastate.edu

**Office Hours for Consultation:** Tuesdays and Wednesdays 10:00 – 10:30 or schedule an appointment (in person, by phone, by email). We are interested in visiting with and assisting you with any concerns you may have.

**Course Description, Goals, and Outcomes:** The general goals for the course can be summed as enhancing observation, identification, and communication skills as they apply to the natural history and ecology of Midwestern birds (Cr. 1; Prerequisite: AECL 310, 312). These are cornerstone abilities of well-trained field researchers and naturalists. This course contributes to the accomplishment of the following departmental student outcomes:

- Assess, analyze, synthesize, and evaluate information fairly and objectively;
- Communicate clearly and effectively with different types of audiences using appropriate oral visual electronic and written techniques; and,
- Exercise life-long learning skills developed before graduation.

In addition, by the end of the semester you must be able to:

- 1) Efficiently use standard bird observation equipment to identify unknown birds, including binoculars, field guide, and vocalization guide.
- 2) Identify 137 and 56 common bird species of Iowa respectively by sight and sound.
- 3) Effectively communicate the differences between similar birds using key identification characteristics and standard language, including bird topography, vocalizations, bird behavior, and habitat.
- 4) Explain key similarities and differences between 1) Class Aves (birds) and other vertebrates, 2) the major orders of birds found within Iowa, and 3) major families within the Order Passeriformes found within Iowa. (Note that Class, Order, and Family are used here in the taxonomic sense.)
- 5) Execute two common bird monitoring techniques, point counts and Breeding Bird Surveys.
- 6) Appreciate how birds relate to their environment and describe adaptations that allow them to survive in these environments.

This course has field, laboratory, and lecture components. The field component comprises the bulk of the semester and consists of a number of field trips and a semester project, which will allow you to become familiar with 1) standard bird observation field equipment (i.e., binoculars, scopes, field guide) and 2) field markings and vocalizations, flight patterns, habitat associations, seasonal distribution, etc. of many Iowa bird species. Field trips start promptly at 7:00 am. If weather is extremely bad, we may have to cancel the trip, but the decision will not be made until 7:00 am that day. Be sure to wear clothing appropriate for the weather, including rain gear, hat and gloves/mittens, and appropriate footwear – birding can be very profitable despite cold temperatures, strong winds, or rainstorms.

Laboratory consists of indoor identification of prepared avian study skins, museum mounts, and photographic slides. This will give you close up, hands-on exposure to Midwestern bird species,

which you will be expected to identify by sight. You will also be expected to identify many of these species on the basis of their vocalizations, which can be both challenging and rewarding for students.

Lecture consists of a series of 30 – 40 minute presentations and will only be a part of the course for the first half of the semester. Lectures are sometimes combined with viewing video tapes. Because a number of other ornithological topics (e.g., the mechanics of flight, anatomy) are discussed in Vertebrate Biology (AECL 310), they will not be discussed here.

**Ground rules for the Class:** Because observation is a critical part of the class, it is important that you come to class prepared and ready to actively participate. This means, given the early start time, you may want to prepare your morning coffee the evening beforehand. This also means being properly dressed to withstand the elements – it's hard to be observant if you are cold and/or wet. Because identification is integral to the class, be prepared to memorize many key terms and characteristics – some things you just need to know by heart to be an effective fieldworker or naturalist. Because communication is important in nearly every aspect of life, be ready to interact with others and help to develop a supportive learning environment. Positive course participants respect each other and diverse opinions, and avoid put-downs.

#### **Course Materials:**

1) Binoculars: Binoculars are required for each student on the field trips. You may use your own if you have them, otherwise you may check out a pair from the department to use for this course. You are expected to return the binoculars in the same condition as when you received them at the end of the semester.

2) Text: National Geographic's Birds of North America, 4<sup>th</sup> edition. Available in bookstore. It is acceptable to use an alternate field guide if you already have one, but we highly recommend the National Geographic guide. Regardless of the field guide you use, bring it with you on all field trips and to lab.

3) CD: Stoke's Guide to Eastern Bird Songs. Available in bookstore. Again, it is acceptable to use another song guide if you have one, as long as it covers the vocalizations you are required to know for class. You do not have to bring your song guide to class; this is a resource we expect that you will make heavy use of outside of the class period.

4) Field Notebook: A pocket-sized notebook for recording field observations on class field trips and for your semester field project. Keeping your own record of birds seen on field trips and keeping your own notes on identification cues will assist you in becoming an expert birder. Rite-in-the-Rain notebooks, available at the bookstore, are optional but also optimal for this purpose as you can write on this paper even if it gets wet, which is apt to happen when spending time outside.

#### **Evaluation Components:**

1) Lab project: Each student will choose one bird from our identification list to research in greater depth. Students will research the bird's taxonomic status, identification characteristics, migratory status, habitat, breeding system, conservation status, and natural history using library resources, and then deliver a 5-minute PowerPoint presentation on these topics during class. Visual aids for the presentation are highly encouraged. Presentation preparation materials will be handed in to instructors for assessment; students will additionally be evaluated based on their presentation content and delivery. This assignment is worth 50 points. There will be 5-6 student presentations during weeks 3-7 of the class.

2) Lab participation points: For weeks when student presentations are scheduled, 2 points will be given per period for actively engaging in discussion. Active engagement includes asking questions and/or sharing experiences that relate to the topics addressed. A total of 10 points will be allocated toward participation.

3) Lab quizzes: Quizzes are scheduled for weeks 2 – 6 of the semester (total of 5). Each quiz is worth 10 points. One of the quizzes will be dropped, thus allowing for a missed lab to personal reasons (e.g., illness, tardiness). Thus, 4 quizzes at 10 points each = 40 points. Makeup quizzes will not be given.

4) Lab exam: One 100 point lab exam will be given covering the identification of Iowa bird species using lab specimens, slides, and vocalizations.

5) Field quizzes: Five field trips are scheduled for the last 5 weeks of class. On each field trip, an on-site quiz will be given that is worth 10 points. One of the quizzes will be dropped, thus allowing for a missed field trip due to personal reasons (e.g., illness, tardiness). Thus, 4 quizzes worth 10 points each = 40 points. Makeup quizzes will not be given.

6) Field project: In lieu of a final exam, a 100-point individual project, designed to enhance observation and written communication skills, is required. Students are asked to select an area and to observe the birds within that area on five different occasions for at least 30 minutes. Once data collection is complete, students will summarize their observations and draw conclusions regarding the similarities and differences in bird composition, abundance, and behavior during the three different visits. Students should also make specific notes about the habitat type of the area they are observing. This project is to be completed during the 2<sup>nd</sup> half of the semester, and observation periods should be about a week apart. Field notes should be taken during each visit and turned in with the final project write-up. This project is also designed to be low key and fun, and to encourage you to get out birding on your own. Note that some locations will provide more interesting birding opportunities than others; choosing a location with greater bird diversity will both challenge your skills and make for a more enjoyable experience. More specific expectations regarding this project will be provided at mid-semester.

The point breakdown for this course consists of:

Lab project:	50
Lab participation points:	10
Lab quizzes:	40
Lab exam:	100
Field quizzes:	40
<u>Field project:</u>	<u>100</u>
TOTAL POINTS:	340

Grades will be assigned based on the number of points earned out of 340 points. In the past, breaks between the major grades (A, B, etc.) have generally been at 90%, 80%, etc. The plus/minus system will be used, with cutoffs for pluses and minuses at three percentage points below and above the major letter grade cutoffs, respectively.

Each student will be able to take advantage of one extra credit opportunity as a part of the course, worth a maximum of 15 extra credit points. Extra credit can be obtained by participating in an activity associated with a bird conservation organization, whether bird rehabilitation, population monitoring, habitat restoration, etc., as pre-approved by course instructors. Write up

a short report (~1 page) on the activity and what you learned from it. Also provide the name and contact information of the activity organizer.

**WebCT:** Grades and copies of handouts provided in class will be posted on WebCT. The course site is located at: <https://webct.ait.iastate.edu/ISUtools/webhtml/login.html>. Use your Iowa State email user name and password to access the course site on WebCT.

**A Note about Course Content:** Before complaining about the workload associated with a 1-credit course, consider the following: There are no reading assignments and only one exam, which will be completed by mid-semester. Because the entire second half of the semester is spent on field trips, most of the material is presented during the first half of the semester rather than typical end-of-semester rush. In terms of species identification, you are expected to learn about 137 species names and about 62 order and family names or, in other words, about 199 names. This averages to about 13 names per week over the semester and is easily achievable if you keep up with your work.

**A Note about Hazardous Chemicals:**

Laboratory specimens that we will be handling in lab are preserved with a potentially hazardous chemical called naphthalene, which is used for insect control. The chemical has a noticeable smell (like mothballs) and occasionally some of the crystals are attached to the specimens. The amount of chemical you will be exposed to is considered negligible; however, to better ensure your safety, no food or drink is allowed in the lab and you should wash your hands after handling specimens.

**Course Schedule**

Week	Date	Topic	Pages
1	Jan. 10,11	Introduce course and overview of lab project Instructors model lab project presentation expectation Bird ID = Gaviiformes, Podicipediformes, Pelecaniformes, Ciconiiformes, Anseriformes (through Tribe Anatini) Topography of a bird Pre-test	6-83
2	Jan. 17,18	Lab Quiz 1 <i>Field Trip: Winter birds; Pease household &amp; Ada Hayden Park</i> How to use binoculars and field guide	
3	Jan. 24,25	Lab Quiz 2 Student project presentations Bird ID: Anseriformes, Falconiformes, Galliformes Read, Pair, Share	84-151
4	Jan. 31, Feb. 1	Lab Quiz 3 Special guests from the ISU Wildlife Care Clinic Student project presentations Bird ID: Gruiformes, Charadriiformes, Columbiformes, Cuculiformes, Strigiformes, Caprimulgiformes, Apodiiformes, Coraciiformes Read, Pair, Share	152-273
5	Feb. 7,8	Lab Quiz 4 Student project presentations	274-339

		Bird ID: Piciformes, Passeriformes (through Regulidae) Watch, Pair, Share	
6	Feb. 14,15	Lab Quiz 5 Student project presentations Bird ID: Passeriformes: Turdidae through Cardinalidae Read, Pair, Share	344-433
7	Feb. 21,22	Student project presentations Bird ID: Passeriformes: Icteridae through Passeridae Practice Exam	434-457
8	Feb. 28, Mar. 1	<b>Lab Exam</b>	
9	Mar. 7,8	Check out binoculars Bird ID: Review Field Trip: Little Wall and Anderson Lake	
10	Mar. 14,15	<i>Spring Break – no class</i>	
11	Mar. 21,22	Field project overview & field notes discussion <i>NatureMapping</i> presentation by Jason O'Brien Field Trip: Pammel Woods	
12	Mar. 28,29	Field Trip: Ada Hayden & Brookside Parks Field Quiz 1	
13	Apr. 4,5	Field Trip: Ledges State Park Field Quiz 2	
14	Apr. 11,12	Field Trip: Emma McCarthy Lee & East Riverside Parks Field Quiz 3 Point counts and transects	
15	Apr. 18,19	Field Trip: McFarland Park Field Quiz 4 Breeding Bird Survey	
16	Apr. 25,26	Field Trip: Pease household Field Quiz 5 <b>Semester Project due by Friday, April 28<sup>th</sup> @ 5pm</b>	
17	May 2,3	Finals Week – No final for this class	