

Syllabus - Biology 3622.03 – Ornithology – Dalhousie University

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Purpose and scope: This class is designed to give students an overview of avian biology, with an emphasis on studying birds in the field. This field-intensive class is hands-on and applied; students learn by doing. Through focused and condensed lectures, selected lab exercises, handouts, readings, and extensive field trips to a variety of Nova Scotia ecosystems, you will learn about the evolution, adaptations, and diversity of birds, key aspects of their ecology and behaviour, and techniques and strategies for the study of their behaviour, populations and communities. You will also gain experience in conducting field studies, including study design, data collection, data analysis and presentation of results. You will be amazed at how much you will have learned in just over 2 weeks. A walk in the woods will never be the same again!

Prerequisites: Intro. Biology (BIOL 1010/1011 or 1021/1022 or DISP), diversity (one of BIOL 2001/2002/2003/2004), and intro. ecology (BIOL 2060), or instructor's permission. Knowledge of statistics and familiarity with Excel spreadsheets are helpful, but not required, for research projects.

Auxiliary fees: The fee you paid in addition to tuition is used to cover the cost of van transportation and food and lodging at the field station. We will cook meals using food that is purchased with these fees. The meals are usually very good, with plenty to eat. Arrangements for special diets can usually be made. You will fill out a food questionnaire on the first day of class.

Classrooms: Our default classroom and laboratory is LSC 4009 (the "ecology lab"). We will meet there unless otherwise noted. Any schedule changes will be posted on this door. Lectures will be in in another room (TBA). The symposium on the last day of class will be in LSC 812. The computers in the Killam Library are available for your use. Unless otherwise noted, field trips leave from the parking area outside Biology, between LSC and Kings.

Meeting Times: This class is intense. Expect to be in class all day, every day. The tentative schedule is weather dependent and may require changes on a daily basis, so do not make other commitments for the entire duration of the class.

Field Trips: This class is very intensive overall as well as field intensive. You are expected to arrive on time prepared for the field trips as scheduled. Vans will not wait for you. Be prepared for all conditions. We will take one field trip in Halifax the first week, pending suitable weather. We will take a week-long (7-day, 6-night) trip to southwestern NS. We will stay at the Harrison Lewis Centre (HLC) at Sandy Bay, on the coast by Port Joli, Queens County. The HLC field station has small unheated cabins with bunk beds, and a larger building with a wood stove, a full kitchen, including refrigerator and freezer, washrooms, shower, classroom and internet. You need a warm sleeping bag or TWO regular sleeping bags and long johns. Nearby sites we will visit include Thomas Raddall Park and the Kejimikujik Seaside Adjunct. We will spend one night at the Mersey Tobeatic Research Institute in Kempt, NS, in order to visit Kejimikujik National Park in the evening and morning.

Student responsibilities: This class is hands-on, so you must participate fully in all activities, including attending all classes and doing your share of chores at the field station.

- (1) **Attendance is mandatory.** You are expected to attend all lectures, labs and field trips. I will deduct any unnecessary absences from your final mark, in proportion to the amount of class time missed. If unable to attend a class, you must contact me at once.
- (2) **Participation.** You are expected to participate and cooperate in all class activities and follow rules at the field stations. If you don't or you cause a problem for the class or instructors, your final grade will be reduced in proportion to the severity of the problem.
- (3) **Schedule changes.** You are responsible for finding out about schedule changes and contacting us if you have any questions about the class meeting time, field trips, class material, reports or independent projects. Check the OWL bulletin board for any changes. If a field trip is cancelled because of rain, a note will be posted there early in the morning. You can also call me on my cell phone if you are unsure about the schedule.
- (4) **Preparation for field trip.** You are expected to come prepared for field trips. You will need to bring appropriate clothing and footwear for each trip, any equipment or field guides you have checked out, and any personal items needed (see attached lists).
- (5) **Safety precautions.** You must adhere to all safety guidelines, including those mentioned here. Whenever out of sight of the instructors or the field centre where we will be staying, you must use the buddy system--stay in groups of 2 or more--AND inform the instructors of where you are going and when you will be back. Only authorized personnel will drive the rented vans on field trips. Alcoholic beverages are NOT permitted on the field trips. Additional guidelines will be posted at the field centre.

OWL: We will use the online learning system to post class information and links to helpful web sites. Material includes a library of bird sounds (the same as on the BBS CD you can check out) and bird photographs of >100 unnamed species of birds on which you can practice identification skills. You need a Dal NetID and password to access OWL and any of the computer labs at Dal. Lecture slides will be posted on OWL.

Required text: *The Sibley Guide to Bird Life and Behavior* by David Allen Sibley. You can purchase at Amazon.ca. If you do not want the book, you can purchase a photocopy of the required reading (Part I of the book) from Julia's Photocopy. All other material will be provided as handouts in class.

Other class materials: You will receive a hard-cover notebook on the first day of class to record field observations (see next page). You will need a pair of binoculars or all field trips. You may check out a pair from SEASIDE on the first day of class. If you can borrow a decent pair of binoculars from family or friends, they may be better than what we can loan. We have 7 x 35 or 8 x 40 binoculars (the number 7 or 8 is the magnification power, and the number 35 or 40 is the width of the light-gathering opening in mm, which should be 5-6 times the power to be able to see some detail on the birds). You will need a field guide. You can check one out from SEASIDE but if you already have an interest in birds, you will want your own field guide. The best value is through Amazon.ca. Bird names change, so more recent books are better. The following field guide is recommended for this class (copies are available for check-out):

- *Field Guide to the Birds of Eastern and Central North America* by Virginia Marie Peterson and Roger Tory Peterson

Evaluation of student performance: A total of 10 assessments will evaluate your performance:

Assignment, Exam, or Presentation	Marks %	
Lab I – Biodiversity (team)	4	
Lab II – External Anatomy (team)	3	
Lab III – Avian Skeleton (team)	3	
Lecture exam (individual)	25	
Lab practical exam (individual)	10	
Field Quiz on species identification (individual)	10	
Field Notebook (individual)	20	
Oral presentation and revised slides (team)	11	
Symposium participation (individual)	4	
Data report for project (team) – submit online	10	
Total	100	

Grading scale: The grading scale is the same as for other science classes at Dalhousie:

90-100 A+	70-74 B	53-55 C-
85-89 A	65-69 B-	50-52 D
80-84 A-	60-64 C+	<50 F
75-79 B+	56-59 C	

Field Projects and symposium: Working in teams of 2-3 students, you will conduct a field research project on birds in coastal, forest and/or field habitats at Sandy Bay, on or near the Harrison Lewis Centre lands. Copies of the field projects, including the data reports and PowerPoint presentations, will be provided to the Centre when the class is finished. Each team will summarize the data collected for their project in a *Data Report*, which will be marked for completeness and clarity (see page 5). On the last day of class, your team will give a 20-min *Oral Presentation* of your field project, using PowerPoint, and leave an additional 10 min for questions. Your symposium mark will be based on:

- *Oral presentation and slides:* 11 marks; 5 marks on team oral presentation content (including clear explanation of research question, rationale and background, methods, data analysis, and interpretation) and 5 marks on team oral presentation format (audio-visual aids, organization, speaking style, and overall presentation effectiveness); 1 mark for revised PowerPoint slides, based on feedback received during/after your presentation.
- *Participation:* 4 marks on your individual participation in the symposium (asking questions, stimulating discussion, making useful comments or suggestions about your classmates' presentations).

Field notebook: When conducting field studies it is extremely important to document everything you do and see that may be relevant to the data you collect. If you are hired to conduct a study, your employer will want a copy of your field notes. A field notebook is a public record, which means it may be scrutinized closely. It is important to develop the skills of taking careful, accurate, complete, neat, and well-organized notes. Therefore maintaining a field notebook will be an essential part of this class and is worth 20% of your grade. Record all pertinent sightings and other information from field trips in real time. Copied over notes will NOT be accepted. A copy of the marking sheet with evaluation criteria is given on the next page.

Biology 3622, Field Notebook Marking Sheet Name: _____

Format and organization (20%): _____ out of 4.0

- name on front cover, mailing address and e-mail address inside the cover
- pages numbered, starting with page 1, AFTER the Table of Contents, top line of each with
 - location, date, and page number , e.g.: Frog Pond 11 May 2011 p. 1 - or -
 - focal date, date, and page number: e.g.: Piping Plover 29 May 2011 p. 16 - or -
 - section and page number, e.g.: Species p. 35 - or - Sounds p. 45
- Table of Contents giving the starting page numbers of the different entries:
 - Field trips (each trip with its location and date; can be dispersed with focals)
 - Focal observations (each listed separately; can be dispersed among the field trips)
 - Species (separate section in second half of book)
 - Vocalizations (separate section in second half of book)
- all writing relatively neat (considering it is written in the field), and easy to read
- all codes defined clearly and used consistently
- all dates and times follow the continental dating system: 13 May 2011, 08:30 ADT

Documentation of field trips (20%): _____ out of 4.0

- pertains to all 'official' field trips, when the class was together, led by instructors
- ancillary information is accurate and complete - location, date, start time, end time, weather
- habitat described or classified (environment, tree species, vegetation structure)
- bird species detected and whether you saw or heard the bird (or both), or whether heard or seen (or both) by the other people; indicate type of sounds if heard

Focal observations (20%): _____ out of 4.0

- at least 10 entries, each for a different species or activity/event; many will be opportunistic
- all class 'field' activities or events (e.g., wildlife rehabilitation center, swifts going to roost, owl surveys, point counts, line transects)
- at least 5 should be detailed descriptions of the behaviours of birds you observed closely
- details described on one or more pages for each entry; what did you notice, why it's interesting

Species summary section (20%): _____ out of 4.0

- put species on the left side (each should appear only once) and leave the right side blank for all places & habitats encountered
- species AOU-code (same as used elsewhere in the book, common name, Latin name, Family)
- places and habitats where species was found during field trips

Sounds summary section (20%): _____ out of 4.0

- vocalizations and/or non-vocal sounds of each species encountered, and whether heard or not
- each described in a distinctive way that will allow you to identify the species; can be based on field observations, book descriptions, or sound collections (CD or web)
- sources of each description attributed in a concise way (consider using codes or symbols)
- proper use of terminology (type of sound: songs, calls, drumming, winnowing, etc.)

Field notebook mark (100%): _____ out of 20.0 marks *Marker initials:* _____

comments:

Data Report for Research Project (Team assignment) – blank file can be downloaded from owl

Fill in the information in each row of the table and saving as a Word file. Use your Project name as the *filename*. If you replicated the table, instead of using this version, that is OK as long as all the information is there and in the same order. For * items, please write in complete sentences.

Information needed	Information specific to your project
Project title	
Names of researcher(s)	
Objective(s)*	
Rationale*	
Bird species	
Dates of study	
Location of study	
UTM Easting(s)	
UTM Northing(s)	
Habitat (type of vegetation, dominant plant species)	
Techniques used to collect data (be specific, describe each)*	
Type of data collected (be specific, describe each type)	
Results* (refer to attachments as appropriate for analyses, graphs, photos, maps)	
Conclusions*	
Recommendations for future studies*	
Attachment 1	
Attachment 2	
Attachment 3	
Attachment 4	
Attachment 5	

Note: use as many rows as you have different attachments; include your Powerpoint Presentation, Data files, Photographs, etc. Make sure your attachments are given a useful file name. All document names should include the project name and year. All documents must be packaged together in one zip file before uploading on OWL.

Statement on Academic Integrity

At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect (*The Center for Academic Integrity, Duke University, 1999*). As a student, you are required to demonstrate these values in all of the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity.

What does academic integrity mean? At university we advance knowledge by building on the work of other people. Academic integrity means that we are honest and accurate in creating and communicating all academic products. Acknowledgement of other people's work must be done in a way that does not leave the reader in any doubt as to whose work it is. Academic integrity means trustworthy conduct such as not cheating on examinations and not misrepresenting information. It's the student's responsibility to seek assistance to ensure that these standards are met.

How can you achieve academic integrity? We must all work together to prevent academic dishonesty because it is unfair to honest students. Make sure you understand Dalhousie's policies on academic integrity (see academicintegrity.dal.ca/Policies/) The following are some ways that you can achieve academic integrity. These examples should be considered only as a guide and not an exhaustive list.

- **Do not cheat in examinations or write an exam or test for someone else.**
- **Do not falsify data or lab results.**
- **Avoid plagiarizing, intentionally or unintentionally, for example...**
 - **Clearly indicate the sources used in your written or oral work. This includes scientific papers, web pages, graphical representations, diagrams, videos, and images**
 - **Do not use the work of another from the Internet or any other source and submit it as your own**
 - **When you use the ideas of other people (paraphrasing), make sure to acknowledge the source**
 - **Do not submit work that has been completed through collaboration or previously submitted for another assignment without permission from your instructor.**

Where can you turn for help? If you are ever unsure about any aspect of your academic work, contact me.

- Academic Integrity website (see <http://academicintegrity.dal.ca/>) - Links to policies, definitions, online tutorials, tips on citing and paraphrasing
- Writing Centre (see <http://writingcentre.dal.ca/>) - Assistance with learning to write academic documents, organization, argument, transitions, writing styles and citations
- Dalhousie Libraries (see <http://www.library.dal.ca/>) - Workshops, online tutorials, citation guides, RefWorks
- Dalhousie Student Advocacy Service (see <http://www.dsu.ca/services/advocacy>) - Assists students with academic appeals and student discipline procedures.
- Senate Office (senate.dal.ca) -List of Academic Integrity Officers, discipline flowchart, Senate Discipline Committee

What will happen if an allegation of an academic offence is made against you? As your instructor, I am required to report every suspected offence. The full process is outlined in the Faculty Discipline Flow Chart (senate.dal.ca/Files/AIO_/AcademicDisciplineProcess_Flowchart_updated_July_2011.pdf) and includes:

- Each Faculty has an Academic Integrity Officer (AIO) who receives allegations from instructors
- Based on the evidence provided, the AIO decides if there is evidence to proceed with the allegation and you will be notified of the process.
 - If the case proceeds, you will receive a PENDING grade until the matter is resolved
 - If you are found guilty of an offence, a penalty will be assigned ranging from a warning, to failure of the assignment or failure of the class, to expulsion from the University. Penalties may also include a notation on your transcript that indicates that you have committed an academic offence.

Tentative schedule - Activities subject to change due to weather

Activity planned (includes ~1-hr lunch break)
<p>Introductions and class administration (LSC 4009)</p> <p>Lecture: Avian Biodiversity (LSC 220)</p> <p>Lab I: Avian Biodiversity Exercise (SLC 4009)</p>
<p>Field trip to Frog Pond, Dingle Park (on bus line; meet there; bring lunch, snacks, water); begin notebook entries</p>
<p>Lectures: Avian Form and Function (LSC 220)</p> <p>Lab II - External Anatomy of Birds (LSC 4009)</p>
<p>Lectures: Avian Behaviour & Ecology (LSC 220; break after 50 min)</p> <p>Lab III - The Avian Skeleton (LSC 4009)</p>
<p>Lectures: Avian Conservation Biology (LSC 220)</p> <p>Lab IV - Internal Anatomy (LSC 4009)</p>
<p>Lecture & lab exam (LSC 4009 and 4016)</p>
<p>Meet at Dal; bring lunch; drive to Kejimikujik National Park; survey Grafton Lake; survey red maple floodplain habitats by canoe in afternoon; dinner at MTRI; survey Chimney Swifts at dusk; survey owls after dark; stay overnight at MTRI</p>
<p>Dawn chorus walk at MTRI; breakfast; drive to Kejimikujik NP; survey Grafton Lake and Hemlock & Hardwoods trails for birds of different forest habitats; lunch at MTRI</p> <p>Drive to Liverpool, stop for groceries; arrive at HLC; unpack; dinner; evening walk at HLC</p>
<p>Dawn Chorus walk at HLC; survey the different habitats at HLC and Thomas Raddall Park; learn field methods (e.g., point counts, spot-mapping, transects, quantifying behaviour (vocal/social/foraging); finalize projects with instructors in afternoon</p>
<p>Begin team field projects at HLC/Raddall; revise as necessary with instructor feedback</p>
<p>Continue team field projects; organize and analyse data; practice ID</p>
<p>Continue team field projects; organize and analyse data; practice ID</p>
<p>Field ID quiz (by sound & sight; can use your binoculars, field guides, notes & notebooks); pack up and return to Halifax by dark</p>
<p>Analyse project data, prepare presentations, prepare data reports; instructor available in LSC 7130</p>
<p>Symposium (location TBA) - Students present and discuss projects; class evaluations and notebooks due at 13:00</p>
<p>Data reports and revised presentations due online (OWL)</p>

What you need for the daytime field trips (including while at field camp):

- binoculars
- field notebook
- bird field guide
- handouts as appropriate
- clipboard & notebook paper
- pens & pencils (the latter work in the rain)
- plastic bags to keep things dry
- small daypack or shoulder bag to carry your things
- sneakers (or hiking boots if you need ankle support)
- sweater or sweatshirt
- windproof jacket
- raingear (jacket & pants)
- ball cap or other kind of hat with a sun brim
- warm hat & gloves (if raining, your hands can get very cold!)
- hair tie for long hair
- bandana
- re-usable water bottle, filled with water
- lunch, snacks
- sunscreen, insect repellent
- camera/phone
- bug head net or jacket (optional; some head nets are available for check out)

In addition, you should bring these items on the weeklong trip:

- **warm** sleeping bag (bring an extra bag or extra blankets if you don't have a warm one)
- pillow for a comfortable sleep
- insulating pad (we have extra blue foam pads – please notify instructor if you need one)
- cell phone and charger; alarm clock (battery operated)
- flashlight & extra batteries
- long pants, shorts, t-shirts, sweater or sweatshirt (make sure you have 2 sets of clothing)
- week's worth of underwear, socks
- warm clothing for cool nights, and foggy or rainy days
- rubber boots, hiking boots, sneakers or sandals for camp, slippers for the cookhouse
- swimsuit and beach towel (optional)
- personal toiletries, toothbrush & toothpaste
- soap, shampoo, bath towel
- prescription drugs, aspirin or ibuprofen, allergy medication (e.g. Benadryl)
- basic snack food & special treats for yourself
- cash, in case you want to purchase anything
- bug head-net or jacket (SEASIDE has some head-nets you can check out) (optional)
- iPod or other portable audio device with bird songs loaded on it (optional)
- novel or other reading (optional – probably won't have any extra time unless it rains a lot)
- laptop (optional, your responsibility; satellite internet is available for e-mail, NOT for TV)
- field guides to other organisms (plants, insects, fungi, marine life) (optional)