Ornithology 4620/7300 Course Outline

2023 autumn term
Brightspace https://online.mun.ca/d2l/home/549831 (updated!)
also: https://www.mun.ca/serg/ornithology.html

n.b., prerequisites are BIOL2210 *Biology of Vertebrates*, BIOL2600 *Principles of Ecology*, Science 1807 *Safety in the Scientific Laboratory*.

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'office' hours: Tuesdays & Thursdays 10:30-12:00 am (call me on 7096930216) and otherwise by advance appointment.

Lectures - Tuesdays and Thursdays 09:00-10:15 am in **C4011** (note change of room!)
Laboratories - Wednesdays 14:00-17:00 ('slot 63') in **CSF2307.**

*Useful but **not necessary*** Textbook: Gill, F.B. 2006. **Ornithology 3rd (new) Edition.** W.H. Freeman and Company, New York, 758 pp. **ISBN:** 9780716749837

Essential for the *laboratory* - **a North American bird field guide *book***
(possibly one of the following, ask me if you find something else that you are considering):
National Geographic Society. 2017. **A field guide to birds of North America**. 7th (current) Edition. National Geographic Society, Washington, D.C. ISBN 9781426218354 **VERY GOOD (order from Amazon.ca) – alternatively, another edition of this, all are good**
Sibley, D. and National Audubon Society. 2000. **The Sibley Field Guide to Birds of Eastern North America: Second Edition.** Random House, New York ISBN 0307957918 **GOOD (order from Amazon.ca)**

Grading:

Mid-term test 15% ***(Thursday October 19, everyone writes on the same day** – no exceptions**)***
Term papers (two paper reviews worth 15% each) 30% (**late September and late October**)
Laboratory quizzes (almost weekly) and exam 25% ***(everyone writes on the same day** – no exceptions - **exam is Wednesday November 29,)***
Final Exam 30%

Policy:

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Syllabus and approximate online lecture schedule (autumn 2023)

*Aim: a broad introduction to **ornithology** (the biological study of birds, class Aves) with frequent reference to topics of current interest in evolutionary ecology, biosystematics and conservation biology that involve studies of birds.*

September 7 Thursday
Welcome, check class list and resolve waitlist, review course outline

Week of September 11-15
Introduction + history of ornithology + bird names and classification avian biogeography + origin and early evolution of birds
Origin and early evolution of birds (cont'd) + *Archaeopteryx* + evolution of feathers and flight + speciation and adaptive radiation

Week of September 18-22
Systematics, classification and phylogeny + the species concept + taxonomic characters and cladistics + convergent evolution + molecular phylogenetic techniques
Avian structure and function I: feather structure and growth, types, as ornaments, tail shape and function, tracts, maintenance, moults and plumages + structural versus pigmented colour + flight and aerodynamics

Week of September 25-29
September 24 Avian structure and function II, physiology: body temperature + respiration + metabolism + temperature regulation + energetics, time and energy budgets + adaptations for feeding + digestion and nutrition

Week of October 2-6
The avian brain + intelligence + eye anatomy and vision + hearing + echolocation + taste and smell
Vocal communication in birds: structure and function of the syrinx + calls and call repertoires + individual recognition + bird song form, development and function

Week of October 9-13
no lectures or lab October 11-12 – thanksgiving – fall semester break
October 12 Vocal communication in birds cont'd: song function, mimicry and dialects

Week of October 16-20
Avian mating systems, eggs and incubation
October 19 mid-term exam *(everyone writes on the same day – **no exceptions**)*

Week of October 30 - November 3
Reproduction in birds… growth and development of young, colonial versus solitary nesting + nest structure and function

Week of November 6-10
Sexual selection in birds: definition + inter- versus intra-sexual selection + relation to mating systems + sexual displays and ornaments + mechanisms of sexual selection involving mate choice + field studies of sexual selection in birds

Week of November 13-17
no lectures Monday November 13 – Remembrance Day
Parental care + cooperative breeding + brood parasitism + annual cycles + migration + navigation + demography and life history + avian community ecology

Week of November 20-24
Bird conservation biology: global status of bird populations and species + island birds + extinction + case histories in avian conservation, climate change + science & politics + endangered species + restoration efforts + science & politics looking forward

Week of November 29-December 3
Biology of marine birds a.k.a. **seabirds**, biology of the ***Newfoundland Turr Hunt, quick course summary***

FINAL EXAM … covers only lecture material… **date and time to be announced**

Laboratory sessions

Aim: familiarize with avian anatomy by handling bird specimens, learn to identify Orders, Families and species of representative Canadian birds

each week's lab (except the first) **begins with a quiz**

September 6 **no lab**

September 13 Avian anatomy, Identification 1 – Swan, geese, ducks, grouses.
September 20 Identification 2 – loons, grebes, shearwaters, storm-petrels, tropicbirds, gannets and boobies, cormorants, herons.
September 27 Identification 3 – American vultures, Osprey, hawks and eagles, falcons, rails, cranes.
October 4 Identification 4 – shorebirds: plovers and sandpipers.

October 11 **NO LAB thanksgiving – mid-term break**

October 18 Identification 5 – gulls and terns, jaegers and skuas, auks.
October 25 Identification 6 – pigeons and doves, cuckoos, owls, goatsuckers, swifts, hummingbirds, kingfishers, woodpeckers.
November 1 Identification 7 - flycatchers, shrikes, vireos, jays and crows, larks, swallows, titmice, nuthatches.
November 8 Identification 8 - creepers, wrens, kinglets, thrushes, pipits, waxwings.
November 15 Identification 9 – American warblers
November 22 Identification 10 – blackbirds, tanagers, grosbeaks, sparrows, finches

November 29 **Lab exam – tests ID skills on all bird species, families and orders covered (*everyone writes on the same day – no exceptions*)**