

Ornithology 4620/7300 Course Outline

2025 autumn term

Brightspace <https://online.mun.ca/d2l/home/631771>

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 and otherwise by advance appointment (call or text me on 7096930216)x.

Lectures - Tuesdays and Thursdays 09:00-10:15 am in **ED4015**

Laboratories - Wednesdays 14:00-16:50 ('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 16, 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 2025)

*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 9 Tuesday

Welcome, check class list and resolve waitlist, review course outline

Week of September 8-12

Introduction + history of ornithology + bird names and classification avian biogeography + origin and early evolution of birds + *Archaeopteryx* + evolution of feathers and flight + speciation and adaptive radiation

Week of September 15-19

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 22-26

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 September 29 - October 3 **no lecture Tuesday September 30**

The avian brain + intelligence + eye anatomy and vision + hearing + echolocation + taste and smell.

Week of October 6-10

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 13-17 **no lecture Tuesday October 14**

October 16 mid-term exam (*everyone writes on the same day – no exceptions*)

Week of October 20 – 24

Avian mating systems, eggs and incubation

Week of October 27-31

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 3-7

Reproduction in birds... growth and development of young, colonial versus solitary nesting + nest structure and function

Week of November 10-11 **no lecture Tuesday November 11 – Remembrance Day**

Parental care (incubation, chick rearing) + cooperative breeding + brood parasitism

Week of November 17-21

Annual cycles in birds + migration + navigation + demography and life history + avian community ecology

Week of November 24-28

Avian 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 looking forward

Week of December 1-5

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 10 no lab

September 17 Avian anatomy, Identification 1 – Swan, geese, ducks, grouses.

September 24 Identification 2 – loons, grebes, shearwaters, storm-petrels, tropicbirds, gannets and boobies, cormorants, herons.

October 1 Identification 3 – American vultures, Osprey, hawks and eagles, falcons, rails, cranes.

October 8 Identification 4 – shorebirds: plovers and sandpipers.

October 15 NO LAB thanksgiving – mid-term break

October 22 Identification 5 – gulls and terns, jaegers and skuas, auks.

October 29 Identification 6 – pigeons and doves, cuckoos, owls, goatsuckers, swifts, hummingbirds, kingfishers, woodpeckers.

November 5 Identification 7 - flycatchers, shrikes, vireos, jays and crows, larks, swallows, titmice, nuthatches.

November 12 Identification 8 - creepers, wrens, kinglets, thrushes, pipits, waxwings.

November 19 Identification 9 – American warblers

November 26 Identification 10 – blackbirds, tanagers, grosbeaks, sparrows, finches

December 3 Lab exam – tests ID skills on all bird species, families and orders covered (everyone writes on the same day – no exceptions)