Winter 2026

Behavioural Ecology of Birds (Biology 4630 WDE)

Course description: An advanced study of avian behavior from an ecological and evolutionary perspective. Topics will investigate the dynamics of spacing, feeding, communication, reproduction, and relatedness in an ethological framework.

Professor: Dr. Janice M. Hughes
Email: janice.hughes@lakeheadu.ca

Office hours: Wednesday at 10:00 am on Zoom.
Office hours also available by appointment.

Please note: I attend to my email regularly between 8:30 am and 4:30 pm from Monday to Friday during the academic year. However, I may not open emails that have been sent from accounts other than your university account (e.g., hotmail) so please use your *lakeheadu.ca* email for all your messages. Also, I teach several courses so please include the course number (BIOL 4630) in your emails.

Course Delivery:

- This is an asynchronous web-based course.
- There are no regularly scheduled lectures or tutorials so you can proceed through the course material at your pace. However, please note that assignments and quizzes based on the course material are due, or occur, on specific dates/times throughout the term.
- All course material will be communicated through MyInfo and D2L.
- The course includes 11 subject units each comprising a Topic Discussion, which provides an overview of the subject, several Reading Resources from the scientific literature, and pertinent Species Resources.
- The content covered in the Topic Discussions and Reading Resources is required reading and testable material in this course. Information provided in Species Resources may provide useful background particulars but is not directly testable.
- There is no textbook; all materials are available free of charge through D2L.

Learner goals:

Upon satisfactory completion of this course, the student will be able to:

1. Understand the principles of behavioural ecology using birds as a model taxon.
2. Demonstrate understanding of advanced themes in avian behaviour from an ecological and evolutionary perspective.

3. Recognize, interpret, and evaluate ideas, findings, and conclusions in the scientific literature.
4. Demonstrate proficiency in using library databases to retrieve journal articles and other services.
5. Integrate knowledge of the principles of behavioural ecology of birds into the construction of written work.
6. Construct a phylogenetic analysis of avian behaviour and ecology by mapping characters on a cladogram and interpreting the resulting evolutionary relationships.

Course Topics

Unit 1: Introduction to Behavioural Ecology

Unit 2: Optimal Foraging – The Costs of Eating

Unit 3: Brainy Birds – The Art of Caching

Unit 4: Resource Defense – Being Territorial

Unit 5: Living in Groups – Costs and Benefits

Unit 6: Communication – What's in a Signal?

Unit 7: The Ecology of Mating Systems – Monogamy vs Polygamy

Unit 8: Sexual Selection – Females Being Choosy

Unit 9: Optimal Clutch Size – Costs and Benefits of Today and Tomorrow

Unit 10: Brood Parasites – The Evolutionary Arms Race

Unit 11: Kin Selection – Getting Along with Others (or Not)

Marking Scheme:

***Assignments*:**

- There are five assignments worth a total of 60% of the course grade.
- Assignments must be submitted as PDF files and uploaded to the appropriate drop box on D2L. The drop box will be open until 11:59 pm on the due date.
- Late assignments will be accepted but a penalty of 10% per day will be imposed. If you are handing an assignment in late, please email me to let me know so that I can reopen the drop box for you. Do not email your assignments to me.
- Any form of plagiarism or copyright infringement, and/or use of generative AI in preparing assignments is a breach of academic integrity and has a minimum penalty of a grade of zero on the work.
- Note the following short descriptions of the assignments but see the Content Tab on D2L for complete instructions:

Assignment 1
- Write a short paper by applying the principles of Tinbergen's "four answers" to a question in avian behavioural ecology.
- Worth 10%
- Due January 19

Assignment 2
- Build and format a reference list of ten academic sources on a provided topic and write an annotated bibliography for five of these sources.
- Worth 10%
- Due February 2

Assignment 3
- Write a short paper on Zahavi's Handicap hypothesis.
- Worth 10%
- Due March 2

Assignment 4
- Interpret a video showing aspects of avian behaviour and (1) write a post about it and (2) reply to two other students' posts.
- Worth 5%
- Due March 16

Term Assignment
- Prepare a formal report that includes a phylogenetic analysis of brood parasitism.
- Worth 25%; character list 5%, data matrix 5%, final report 15%
- Components of the project are due throughout the term as you progress the project to completion. Due dates:
    - Character list due February 23
    - Data matrix due March 16
    - Final report due April 2

Quizzes:

(1) Academic Integrity and Copyright Compliance acknowledgement

- Students must read and agree to the course's academic integrity and copyright compliance guidelines, which is available as a quiz on D2L from January 5 at 12:01 am to January 12 at 11:59 pm.
- No preparation is required prior to taking this quiz.
- This quiz is only worth 0.4% of the course grade but must be completed at the beginning of the term or no other course work will be graded.

(2) Content Quizzes

- There are five online open book quizzes worth a total of 40% of the course grade. Each quiz is worth 8% of the course grade.
- Quizzes will be based on the Topic Discussions and Reading Resources, but not the Species Resources. Quizzes are not cumulative.
- Quizzes are comprised of several short answer questions (e.g., multiple choice, true/false, fill-in-the-blank questions) and one essay type question. More specific details on quiz format are available under the content tab on D2L.
- Any form of plagiarism or copyright infringement, and/or use of generative AI on quizzes is a breach of academic integrity and has a minimum penalty of a grade of zero on the quiz.
- Please ensure that you have a good internet connection before you begin your quiz. If there are any issues when writing it, such as a disconnect or interruption, you must contact me by email during the quiz.
- Quizzes will be open for 24 hours (between 12:01 am and 12:59 pm) on the dates listed below. If you cannot write a quiz on a scheduled date due to conflicts, please contact me in advance by email so that your quiz can be rescheduled.

Quiz 1
- Covers units 1 to 3
- Open on January 26

Quiz 2
- Covers units 4 and 5
- Open on February 9

Quiz 3
- Covers unit 6
- Open on February 23

Quiz 4
- Covers units 7 to 9
- Open on March 9

Quiz 5
- Covers units 10 and 11
- Open on March 23

I am committed to providing a learning environment that will give all students the best possible chance of success in this course. Please drop into my Zoom office hours (or make an appointment) if I can be of assistance.

Accessibility:

I am committed to achieving full accessibility for persons with disabilities and/or medical conditions. This includes arranging academic accommodations for students with disabilities and/or medical conditions to ensure they have an equitable opportunity to

participate in all their academic activities. If you are a student with a disability and/or medical condition and think you may need accommodations, you are strongly encouraged to contact Student Accessibility Services (SAS) for more information. For students already registered with Student Accessibility Services, I can offer many solutions for your recommended accommodations. Please feel free to make an appointment with me to discuss options.

Academic Dishonesty:

Lakehead University takes academic dishonesty very seriously; this includes (but is not restricted to) cheating, plagiarism, impersonation, and collaboration on tests. There is a zero-tolerance policy for academic dishonesty in my courses, and penalties will be strictly enforced. If you are caught participating in academic dishonesty in this course, a formal report will be sent to the Dean of Sciences and Environmental Studies and Office of Student Affairs, and documentation of the offence may be added to the Student Conduct Database and your permanent academic record.

A breach of Academic Integrity is a serious offence. The principle of Academic Integrity, particularly of doing one's own work, documenting properly (including use of quotation marks, appropriate paraphrasing and referencing/citation), collaborating appropriately, and avoiding misrepresentation, is a core principle in university study. Students are strongly advised to familiarize themselves with the Student Code of Conduct (Academic Integrity) and, in particular, sections 26 and 83 through 85. Non-compliance with the Student Code of Conduct will not be tolerated in this course and the Student Code of Conduct will be adhered to in terms of disciplinary action. The Student Code of Conduct provides a full description of academic offences, procedures when Academic Integrity breaches are suspected and sanctions for breaches of Academic Integrity.

You can find the university regulations regarding academic dishonesty here:
https://www.lakeheadu.ca/students/student-life/student-conduct/academic-integrity

According to these regulations, any collaboration on quizzes is considered cheating. You must do the online quizzes alone with no help from friends, family, or classmates! The minimum penalty for collaboration or cheating is a mark of zero on the test. Also, cutting and pasting, copying, or downloading answers from another source (e.g., Wikipedia) is considered plagiarism. The minimum penalty for plagiarism will be a grade of zero on the work. You can find more information on the D2L course webpage. Not reading these instructions is not an excuse for not knowing them!

Use of AI Programs:

The use of any generative AI programs (such as ChatGPT) on exams and assignments in this course is considered a breach of academic integrity and, as such, the minimum penalty will be a grade of zero on the work. In addition, a formal report may be sent to the Dean of Sciences and Environmental Studies and Office of Student Affairs, and documentation of the offence may be added to the Student Conduct Database and your permanent academic record.

Generative artificial intelligence (Generative AI or GenAI) is a category of AI systems capable of generating text, images, or other media in response to prompts. These systems include ChatGPT and its variant Bing (built by OpenAI) and Bard (built by Google) among several others. Other Generative AI models include artificial intelligence art systems such as Stable Diffusion, Midjourney, and DALL-E. Any use of GenAI systems to produce assignments or exam answers for this course is not permitted. All work submitted for evaluation in this course must be the student's original work. The submission of any work containing AI generated content will be considered a violation of academic integrity ("Use of Unauthorized Materials").

Weekly Summary of Tasks

Week	Task Due	Details	Due Date	%
1	None	n/a	n/a	n/a
2	Academic Integrity and Copyright Compliance	Mandatory; available on D2L	Jan 12	<1%
3	Assignment 1	Tinbergen's Answers	Jan 19	10%
4	Quiz 1	Covers units 1 to 3	Jan 26	8%
5	Assignment 2	Annotated Bibliography	Feb 2	10%
6	Quiz 2	Covers units 4 to 5	Feb 9	8%
Study Week				
7	(1) Quiz 3 (2) Character list	(1) Covers unit 6 (2) Term project part 1	Feb 23	8% 5%
8	Assignment 3	Zahavi's Hypothesis	Mar 2	10%
9	Quiz 4	Covers units 7 to 9	Mar 9	8%
10	(1) Assignment 4 (2) Data matrix	(1) Discussion Post (2) Term project part 2	Mar 16	5% 5%
11	Quiz 5	Covers units 10 to 11	Mar 23	8%
12	Term assignment report	Final Phylogeny Report	Apr 2 (Thursday)	15%