

Special Topics: Movement Ecology

BIOL4008-22

Winter 2022

Instructor:

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Office Hours: Wednesday 9:00 – 10:00 by appointment

TEXT: There is no assigned or required textbook for this course.

ADDITIONAL READINGS: Supplemental readings, primarily peer reviewed published papers will be assigned throughout the course. These readings will either be overview papers to provide general background, or material required for specific lectures that we will discuss as a class (see tutorials below). In most instances, I will provide these materials, but I will also expect students to find additional relevant published material using university/academic search tools.

CLASS TIMES: Lectures will take place twice a week (3 hrs/wk); Monday and Wednesday 14:30 – 15:50. All lectures will be virtual via the internet, but all will be live unless otherwise informed by the instructor. Please be prompt to join the virtual classes as they will begin immediately at the above times.

COURSE OBJECTIVES: Animal movement, dispersal and migration patterns structure global ecosystems. This course will begin with an introduction to the emerging field of Animal Movement, then will use a broad taxonomic approach to examine temporal and spatial variation in movement patterns covering key areas such as; the modes of locomotion, sensory mechanisms to orientate and navigate, patterns of animal migration, physiological costs of movement behaviors; and the role of personality. The course will include detailed case studies with a focus on novel research methods used. Overall, the course is based around the major assignment following an experiential learning approach. Consequently, lectures will cover the core topics, while readings required to complete the major assignment will supplement student's knowledge on key aspects of movement ecology that will be central to class 'workshop' discussions.

GRADES and GRADE ALLOCATION: The standard University of Windsor grading scheme will be used throughout this course as posted on the University of Windsor website. Grade breakdown is as follows:

Activity	Date	Percent of Grade (%)
Tutorial Discussions	Min of three classes	20

Major assignment (Review paper)	Submission date ~5 th April	45
Final Examination:	To be determined	35

Note Reading week is 19th – 27th February

APPROXIMATE LECTURE SCHEDULE

The overall course will be composed of three main sections:

- 1. Overview of animal movements**
 - (i) Animal movement: taxonomy of movement behavior
 - (ii) Defining migration
 - (iii) Patterns in migration
 - (iv) Methods for studying movement/migration
- 2. Proximate factors in animal movement ecology**
 - (i) Environmental effects on movement over scales
 - (ii) Physiology of movement
 - (iii) Biomechanical and bioenergetics constraints on movement
 - (iv) Orientation and navigation
- 3. Movement life histories and their evolution**
 - (i) Seasonal migration patterns
 - (ii) Habitat drivers of movement
 - (iii) Movements associated with ephemeral conditions
 - (iv) Behavioral and life-history variability in movement strategies
 - (v) Individuality in movement: Animal personality
 - (vi) Summing up and future directions

Please note, the Instructor will base the overall course content around the above topics, but content will vary and is encompassed within the major assignment. Major lectures will cover the 'Overview of animal movements', whereas 'Proximate factors in animal ecology' and 'Movement life histories and their evolution' will be encompassed in class workshops tied with the major assignment.

LECTURE NOTES: PowerPoint presentations of lecture notes will be posted on the relevant university website. Please download these notes and have them with you for each class. In summary, these notes provide an overview or outline of the material covered in each class. It is therefore your responsibility to take additional notes in each class that build on the framework provided in the PowerPoint files. You will be tested on all material discussed in classes in your two lecture exams. Please contact the University of Windsor if you have concerns over accessing a computer or PowerPoint files.

Importantly, these PowerPoint lecture notes are not intended as a replacement for not attending lectures. If you do not attend lectures, where substantial additional information will be relayed to that included in the slides, you will not achieve well on this course.

LECTURE EXAM: The one lecture exam will consist of either short answers or short essays including the requirement to draw diagrams. There will be no multiple-choice questions. All exams must be written in ink, i.e. none erasable pen. Cheating during exams will result in a grade of zero and referral to the Dean's office for disciplinary action.

Missed exams: If a student misses an exam for medical reasons or due to a death in the family, the student may request a make-up exam. A signed note from your doctor or proof of family bereavement will be required. A student missing the final exam for the above reasons must notify the instructor within 2 days of the exam having taken place and provide the required documentation. Make-up exams **MUST** occur within one week of the original scheduled exam date. There are no exceptions to the above rule.

Contesting exam grades: There is the possibility that a simple addition mistake will be made during marking, however, to avoid numerous appeals by students for a higher grade than obtained, the following procedures must be followed. Oral cases for regrading of exams will only be allowed following the below procedure:

- 1) If the issue is purely an addition mistake while I was totaling the grades, please write "Addition error" at the top of the exam and hand it back to the instructor. I will adjust your grade accordingly and return the exam in the following class.
- 2) If you wish to contest a mark assigned to a given question – please type out the original answer that was written in your midterm in a separate word document. Then provide a paragraph explaining why your answer/s addressed the original question or why you feel it deserves more marks. You can reference course notes, peer reviewed papers or information from text books to support your argument. I will read your original answer and explanatory paragraph and make a final decision on your grade. If a student raises concern over their grading of questions, I may choose to re-grade the entire exam. Please note that this type of re-evaluation can either increase or decrease you overall grade and is at the discretion of the instructor. You have one week after exams are returned to apply for a regrade.

UPDATED PROCESS FOR REPORTING ILLNESS (Winter 2022):

1. The University has an official policy for how to report illness during the Winter semester of 2022. The details are at the following website:

http://ask.uwindsor.ca/app/answers/detail/a_id/577

Specifically, you must fill out the "Report Illness" form on that website and submit it. Please note that it is an academic offense to report a sickness if you are not, in fact, sick.

2. Please send your instructor an email message to confirm you have submitted an Illness Report through the above web link.

ASSIGNMENTS:

TUTORIAL DISCUSSIONS: There will be a minimum of three tutorial discussion classes that will take place on three separate dates. The idea of these tutorials will be that students take the lead on the discussion of a paper I assign to the class the week before OR work/feedback on the major assignment (detailed below). Discussion will revolve around the overall content of the paper (key questions addressed, methods, results and main conclusions) plus a critique of the approach of the paper OR provide an update on the major assignment/involve directly undertaking team work on the major assignment. Each tutorial will be marked out of 10 (5 for attendance in class and 5 for participation in discussion). If you do not attend the class, you will be assigned zero marks.

Proposed dates for these tutorial discussions are 2nd February, 23rd February and 21st March. Dates may be altered and students will be notified in advance.

MAJOR ASSIGNMENT: The key learning objectives for this major assignment are: a) develop literature search skills, b) data mining and organization, c) data synthesis, d) team working and e) writing and communication skills.

The major assignment will consist of a review paper up to 30 pages long (12 pt font) in length that will potentially be submitted for peer review. The class will be divided into four groups (approx. 5/6 students per group) and each group will complete a review paper. The topic of the review will be decided between the instructor and the group but will relate directly to a topic on animal movement. Students, under the guidance and supervision of the instructor, will undertake a systematic literature review, determine data that is required, extract data in a predetermined format from collected papers, synthesize data and then organize students within their group to write individual sections of the overall review paper. The group will be tasked with organizing themselves to produce and submit the final review. The assignment will take place throughout the course period and final submission is planned for early April. The instructor will also ask group members to provide feedback on each person's involvement and commitment to the tasks completed following submission.

TEACHING EVALUATIONS: Student evaluations of teaching forms will be distributed during the last two weeks of class.

PLAGIARISM: Plagiarism, whereby you submit work written by someone else under your own name, is not tolerated in this class. Please see the University of Windsor's official policy on Plagiarism at <http://www.uwindsor.ca/aio/plagiarism-policies-and-definitions>. In brief, if more than five words of identical text to that written elsewhere are found without relevant citation or quotation, you will be deemed to have plagiarized. Plagiarism will result in an automatic zero on an assignment.