Welcome to BIOD53 – Special Topics in Behavioural Ecology!

NOTE: This is **not** the syllabus. The official syllabus will be finalized and distributed as soon as possible. This document is a tentative overview of the course designed to give you an idea of what to expect, but the information below is subject to change.

Instructor: Catherine Scott
Email: catherine.scott@mail.utoronto.ca
Office: SW551
Office Hours (tentative): Monday 14:00 & Thursday 15:00

Class meeting times & locations:
Mondays 12:00 – 14:00 (BV361 or SW330)
Thursdays 13:00 – 15:00 (SW330)

TA: Nishant Singh
Email: nishant.singh@mail.utoronto.ca

COURSE OVERVIEW*

Animal behaviour is a topic of perpetual fascination to both scientists and laypeople. The science of animal behaviour is practiced widely and is informed by evolutionary theory, including the study of natural and sexual selection. Animal behaviour research has its foundation in basic observational methods and natural history. Current approaches to animal behaviour as a science benefit from recently developed tools including genomics, real time brain imaging and automated movement analysis, but longstanding low-tech methods are often equally important in even the latest cutting-edge research. Behavioural science and its techniques have wide application in fields as diverse as pharmacology, psychology, experimental evolution, conservation research, sociobiology, social network theory, pest control, and agriculture.

This course will provide a working introduction to the study of animal behaviour, highlighting some selected issues and taking the format of immersion in a behavioural science lab group. Fundamentals of good experimental design will be emphasized, and a critical and inquisitive approach to the literature will be encouraged.

Course Materials

Readings: There is no textbook for this course. We will rely on readings from the primary literature that will be posted on Quercus.

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*modified from the 2017 and 2018 BIOD53 syllabi by Sean McCann & Luciana Baruffaldi

Lectures: For your reference, any lecture slides or other material discussed in class will be posted to Quercus the day after the lecture as pdf files. It is your responsibility to take notes, engage with the materials, and ask questions in class to clarify whenever it would help your understanding. Most lecture slides will focus on diagrams, figures, and other images. As such, do not depend on lecture pdfs for your note taking.

Class Format

This class will consist of lectures, class presentations and discussions about primary research papers (led by you), and laboratories. In the lab, we will design and carry out real behavioural ecology experiments. You will get experience collecting, analyzing, and interpreting behavioural data, and summarizing your results in writing assignments.

Potential Topics

In the ~11 upcoming weeks of classes we will have time to cover 4 or 5 major topics, budgeting about 4 class sessions per topic, with roughly 2 sessions for lectures and presentations/discussion, and at least 2 lab sessions. Below is a list of topics we could cover (some of which overlap). I will request your input on which ones you are most interested in covering during the first class.

- chemical ecology
- competition over resources
- communication (signaling, eavesdropping, luring, deceit)
- mating systems (monogamy vs polyandry/polygyny, sex role reversal)
- sexual selection (mate choice, male-male competition)
- social behaviour (kin selection & recognition, cooperation, altruism)
- parental care & familial conflict
- foraging/predation behaviour and defensive behaviour

Evaluation (TENTATIVE)

Specific information about assignments, rubrics, and due dates will be made available as soon as possible.

Grades will (tentatively) be assigned as follows:

Item	**Percentage of Final Grade**
Quizzes	10%
Writing assignments	30%
Presentation	15%
Lab notebook	10%
Participation	5%
Final exam	30%

About the labs and working with black widow spiders

Biosafety and laboratory protocols: Widow spiders (genus *Latrodectus)* produce a neurotoxic venom, although with the care we will emphasize throughout the course, the chances of receiving a bite are vanishingly small. Appropriate training and supervision with handling spiders will be provided. Because lab time is limited, certain class meetings may divide time between lecture hall and laboratory, in order to accommodate laboratory preparation.

Laboratory and classroom safety: Safety is of paramount importance in both the laboratory and classroom environment. The wellbeing of students and staff is foremost, followed by the wellbeing of our laboratory animals. To this end, we will keep both the classroom and the laboratory free of any obstructions, hazards and spills of any kind. Emergency instructions from laboratory personnel, floor fire wardens, emergency responders and administrative staff should be followed promptly. If we have issues with allergies on the part of class participants, we will seek to minimize exposure to allergens.

Black widow spiders used in our laboratory present a risk to any personnel in contact with them, and we must abide by a biosafety protocol filed by Professor M. Andrade governing their safe handling and care. During our lab work, any and all escapes must be promptly reported to the instructor or TA. Safe containment and escape protocols will be taught in the first laboratory session, and these protocols shall be followed during all subsequent spider activities.

Our laboratory policy requires the wearing of lab coats, **long pants, close-toed shoes**, and gloves; additional precautions and PPE (Personal Protective Equipment) will be stipulated prior to any laboratory session requiring them. Gloves and lab coats will be provided.

Biosafety quiz: Before participating in labs, all students will be required to take and pass a quiz to confirm that they completely understand the biosafety protocols that will be outlined in class during the second week of the semester.

Schedule for Week 2 (complete class schedule coming soon)

Monday: Introduction to behavioural ecology and (if time) spiders.
Notes: Come prepared to take notes with a laptop, other appropriate tech, or pen and paper.

Tuesday: Biosafety lecture and quiz, followed by lab 1: handling and observing widow spiders.
Notes: Come wearing lab-safety approved clothes (see above) and bring note-taking materials including your **lab notebook**, which may be physical or electronic