

*This syllabus is a general representation of the course as previously offered and is subject to change.*

## **BIOL 310 – Introduction to Animal Behaviour**

General Course Syllabus (as of September 2019)

### **About the Course:**

**Course Description:** A course on animal behavior from an ecological and evolutionary perspective, and the methods used to study behaviour and test its adaptive significance.

In this course, students will be exposed to the concepts, tools, and methods for the study of animal behaviour. The course will cover the ecological and evolutionary forces that shape animal behaviour and the conditions that may lead individuals to live solitarily or in groups. Students will learn basic techniques used to code and measure behaviour through a combination of lab and field exercises, and explore how the scientific method is used to test hypotheses concerning the adaptive significance of behaviour. Students will have the opportunity to conduct a mini research project and design a research proposal in the form of a poster to be presented to the class. The course will be highly interactive, requiring student participation during both lecture and lab periods.

**Course Format:** Lecture and Laboratory

**Credits:** 3

**Pre-requisites:** BIOL 121 (third-year standing is required).

### **Course Learning Objectives:**

By the end of this course, students should be able to:

- Identify traits of organisms that can be considered behaviours and the diversity of strategies animals may adopt to forage, escape predation, acquire and defend resources, find mates, and produce and care for offspring.
- Appreciate the factors and mechanisms that shape the morphology, life cycle and behaviour of organisms, including those that involve adaptive (e.g., natural selection) and non-adaptive evolution.
- Measure and analyze behavioural data using a variety of basic methods and statistical tests.
- Identify the elements of good experimental design and get practice designing simple studies to test adaptive hypotheses.
- Appreciate the economics and evolution of different behavioural strategies, such as living solitarily or in groups; adopting generalist vs. specialist foraging strategies; ways of avoiding predation; being territorial vs. not; behaving selfishly vs. cooperatively or altruistically; choosing mates; monogamous vs. polygamous mating systems; modes of parental care; communication; learning and culture.
- Appreciate the use of models to understand and predict the behaviour of animals under different environmental and social conditions.
- Describe the different ways in which animals learn and appreciate the parallels between organic and cultural evolution.

## Textbooks and Additional Resources:

**Required text (UBC Bookstore or eBook Rental):** Davies, N.B, J.R. Krebs, and S.A. West. 2012. An Introduction to Behavioural Ecology. Fourth edition. Wiley-Blackwell.

**Required additional readings:** posted in corresponding Lecture Content Units at the course's Canvas site.

## Evaluation:

The course will consist of a combination of lectures, independent readings, in-class group activities, and short exercises on animal behaviour to be carried out in the laboratory and the field. Participation in the lab and field exercises is mandatory and will be graded. A full individual lab report is expected on one of the lab exercises.

Additionally, pairs of students will develop a research proposal on animal behaviour to be presented to the class at the end of the term in poster format.

There will be a short mid-term exam and a comprehensive final exam covering material from both lectures and labs for the entire semester. **A minimum of 50% in the final exam is necessary to pass the course.** Unexcused absences will result in loss of points corresponding to that week's group activity.

Marks breakdown:

Assessment	Weight
Reading assignments and lecture period participation	10%
Laboratory participation, worksheets, and lab report	20%
Research proposal poster	15%
Midterm	15%
Final	40%

## University Policies:

*UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence.*

*UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom.*

*UBC provides appropriate accommodation for students with disabilities and for religious, spiritual and cultural observances.*

*UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions.*

*Details of the policies and how to access support are available on [the UBC Senate website](#).*

## Schedule of Topics:

Below is a sample schedule of lecture and lab topics (subject to change):

Week	Lecture Topic	Lab Topic
1	Intro to the class	No labs
2	Understanding behavior	No labs
3	Mechanisms of evolution	<b>Field lab:</b> How animals make a living (Jericho Park)
4	The scientific method	<b>Lab:</b> Coding behavior – individuals
5	Foraging behavior	<b>Tutorials:</b> Hypothesis testing and experimental design – articles from the literature Plus: Basic stats and data analysis tutorial
6	Antipredator behavior	<b>Lab:</b> Describing and quantifying behavior using Betta fish
7	Resource defense	<b>Poster:</b> potential research questions due and discussed
8	<b>Midterm</b>  Living in groups, p1	<b>Poster:</b> outline of experimental design due for TA feedback <b>Lab:</b> Coding behavior – groups. <b>Schooling Fish project:</b> set up
9	Living in groups, p2	<b>Schooling Fish project:</b> complete observations and data analysis
10	Social behavior	<b>Poster:</b> experimental design due and discussed with class
11	Finding mates Mating systems and parental care	<b>Poster:</b> poster preparation and tour of posters in Biodiversity Research Centre
12	Communication, learning and culture	<b>Finalize posters</b>
13	Poster session I Poster session II	Last week of classes. No labs. <b>Schooling Fish project report due.</b>
	<b>Final exam:</b> date TBA	