

BIOLOGY 345 – Animal Behaviour (CRN 31192)

Summer 2024

Department of Biology, University of Victoria

Welcome to Biol345!

We acknowledge and respect the lək3ʷəŋən peoples on whose traditional territory the University of Victoria stands, and the Songhees, Esquimalt and W̱SANEĆ peoples whose historical relationships with the land continue to this day. We are thankful to be able to learn together on this land and strive to make the world a better place.

We welcome everyone to learn in this course and we respect every human being, including people from all ethnic backgrounds, religious beliefs, sexual orientations, genders, socioeconomic backgrounds and abilities.

Course Description

Evolutionary and comparative analyses of behaviour. Topics include taxonomic diversity of nervous systems, proximate and ultimate mechanisms, nature/nurture controversies, communication and sensory modes, foraging behaviours, mate choice, sociality, and warfare. Laboratory includes observational and experimental approaches to behaviour of representative invertebrate and vertebrate taxa.

Meetings

Lectures: MWR 4:30 – 6:20 PM, Cun 146

Labs: WR 6:30 – 9:20 PM, Petch 110

Teaching Team

Instructor and SLI: Dr. Rossi Marx, zoology@uvic.ca; Office hours by appointment.

Lab Instructor: Gillian Ens, gillianens@uvic.ca; Office hours TBA.

Prerequisites

[BIOL 184](#) or BIOL 190B; and [BIOL 186](#) or BIOL 190A; and minimum third-year standing; and either [BIOL 215](#), or declared Honours or Major in Anthropology or declared Honours or Major in Combined Biology and Psychology

Course Materials and Readings

Textbook (optional): John Alcock: Animal Behavior, any recent edition.

Students are expected to browse weekly two or more current biological periodicals. Possible journals: Evolution, Nature, Science, New Scientist, Trends in Ecology and Evolution, Animal Behaviour, Behavioral Ecology and Sociobiology, Animal Cognition, Animal Learning and Behavior, Neurobiology of Learning and Behavior.

Some thought-provoking reading: The Case for Animal Rights, T. Regan 1983; Created from Animals, J. Rachels 1983; Mind of the Raven, B. Heinrich 1999; Animal Minds: beyond cognition to consciousness, D. Griffin 2001; The Cognitive Animal, eds. M. Bekoff *et al.* 2002; Minding Animals, M. Bekoff, 2002; Animals matter, M. Bekoff 2007; Wild Justice: The Moral Lives of

Animals, M. Bekoff and J. Pierce 2009; The Age of Empathy, F. de Waal 2009; Are we smart enough to know, F. de Waal 2016.

Excellent DVDs on animal behaviour:

David Attenborough: The Life of Birds, The Life of Mammals, Life in the Undergrowth, Planet Earth, Life in Cold Blood, Blue Planet

Intended Learning Outcomes for Biology 345 Animal Behaviour

Goals for this course

- ✓ We are dedicated science instructors who love biology in all its facets. Our main goal for this course is to excite you about Animal Behaviour, introduce you to examples of animal behaviours of different levels of complexity and to terminology and general principles and concepts, both current and historical, raise your awareness and appreciation for animals and their abilities, and deepen your understanding of the ethical treatment of animals.
- ✓ The major theme that you will encounter throughout this course is ‘continuity of process’, meaning that animal behaviours of more derived species exist in continuity with the behaviours of more ancestral species, and that differences are due to variations in degree and not differences of kind.

At the end of this course, you will

- ✓ understand, be able to define and provide examples for the concept of ‘continuity of process’
- ✓ know, be able to define and provide examples for ethological terms and terminology
- ✓ understand, be able to define and provide examples for ethological concepts, *e.g.* regarding behavioural lateralization, role of nervous systems in generating behaviours, parsing behaviour, communication, sensory modes and sensory exploitation, defences against predators, zoopharmacognosy (self-medication), cooperation, altruism, evolution of play, self-awareness, consciousness, and empathy
- ✓ analyse and critically evaluate relevant published scientific papers
- ✓ be able to collect, synthesize, analyse, document, and present, both orally and in a formal written scientific report, behavioural data
- ✓ understand and appreciate proper, careful, and ethical treatment and handling of animals
- ✓ gain hands-on experience in careful behavioural observations and experiments
- ✓ understand proper stimulus application and the importance of applied stimulus strength, placement, and duration
- ✓ be able to develop ethograms
- ✓ be able to provide proper scientific drawings and graphs representing your observations and results
- ✓ have gained an appreciation for and understanding of the different types, categories, and levels of complexities of behaviours and be able to provide appropriate examples

Throughout the course we expect you to

- ✓ engage with lecture material by discussing in class questions with your peers
- ✓ be aware of animals’ well-being, never place animals in distress, and immediately respond properly when observing animals in non-optimal conditions, both in the field and in the lab
- ✓ exercise responsible time management by meeting all assessment deadlines, being punctual to lectures and labs
- ✓ be proactive, aiming for problem solving rather than complaining
- ✓ adhere to teamwork expectations as outlined in the lab
- ✓ be respectful and collegial with peers and instructors

Labs

Hands-on analyses of simple and complex behaviours across a diversity of taxonomic groups including protists, jellies, sea anemones, annelids, molluscs, echinoderms, and arthropods. Includes a field project.

Labs begin Wednesday, May 15. You will not need to purchase a lab manual from the UVic bookstore. We will post additional relevant materials.

Lab Schedule

Date	Topic	Assignment due
May 15/16	From Taxis to Shadow Reflex	√√; May 15: Project discussion paper 1 (fowl), individual assignment
May 22/23	Writing Workshop and Learning Experiments Part 1	√√; May 22: Tutorial 1, individual assignment
May 29/30	Learning Experiments Part 2	√√; May 29: Project discussion paper 2 (squirrels), group assignment; June 3: Project interim results
June 5/6	Statistics Workshop and Predator - Prey Interactions	√√; June 5: Tutorial 2, group assignment
June 12/13	Presentation Workshop and Agonistic Behaviour in Crayfish	√√; June 12: Project discussion paper 3 (dogs), group assignment
June 19/20	Project Presentations	√; June 19: PowerPoint presentation; Project report & final results
June 27	Lab and Lecture Final Exams	

You will be working in groups for the lab exercises and the project, so proper etiquette for group work is indicated.

You are not required to wear a lab coat in the lab, but you must wear closed-toed shoes and have long hair tied back. People are not allowed to eat or drink in the lab.

Note that the same lab is offered twice a week. This is because the summer course is very condensed, yet we still ask you to work on the project and provide scientifically sound results. Therefore, half of you (last name A-J) will attend the Wednesday session, the other half (last name L – W) will attend the Thursday session. For each group, the time for the second scheduled lab of the week will be set aside for project work, and you do not need to come to the lab.

Lab attendance: You are required to attend all the scheduled labs in order to fulfil the requirements of this course. If you miss, for any reason, **more than two of the laboratory sessions** you will not have completed the course requirements and you will receive a grade of N in the course (incomplete). Please consult the ‘Laboratory Work’ section of the UVic calendar.

If you miss a laboratory session without a valid excuse, you will receive a grade of zero for any lab quizzes and checkmarks. To be excused from a laboratory session, absences due to valid reasons such as illness must be reported to the lab instructor as soon as possible. Absences due to family occasions, other than illness or death, may be considered on an individual basis.

Course Website

Biology 345 has a Brightspace website. You may find there lecture and lab notices, test results, and lecture notes. Much of the lecture material will be posted the day following the lecture at the latest.

Please note that any materials posted on Brightspace are for course purposes only!

Evaluation

Mid-term exam	(Monday, June 03)	20%
Final exam	(Thursday, June 27)	35%
Lab		45%
Lab exercises and quizzes		16%
Tutorials (2@2%)		4%
Laboratory Project		25%

You will submit assignments to Brightspace. We will accept late assignments, but a **20% late penalty will be applied per day for up to two days late**, after which time the assignment will no longer be accepted, unless you have been granted an extension. All requests for assignment extensions or other academic concessions must be made to Rossi Marx (zoology@uvic.ca) before the deadline as soon as you know that you will require an extension. Each request and supporting documentation will be considered on an individual basis. **You must submit, at the time of the deadline, whatever you have completed.** You will be allowed to resubmit the completed assignment if the extension is granted. **Please note that the extended due date must be before the marked assignment and feedback have been released.**

Challenges and queries pertaining to assignments and exams will only be considered for one week after receiving the marked assignment or exam.

You must pass both the lecture and the lab to pass the course.

Midterm and Final Exams

The midterm and final exams will be closed book exams written in person, on paper, and in class and may contain multiple choice, short answer, and essay-style questions and answers. The final exam will contain questions that pertain to material covered in lecture (30%) and lecture and labs (5%).

If you must miss the midterm exam for a valid reason (*e.g.* illness, accident, or family crisis, or athletic competition representing UVic), you must notify Rossi Marx (zoology@uvic.ca) as soon as possible to be permitted to write a deferred midterm exam. You are not required to provide a medical note or other documentation if you are sick. You must write either the midterm or the deferred midterm to successfully complete this course. Not writing either the midterm or the deferred midterm will result in an N.

The final exam can be deferred, *e.g.* in cases of illness, accident, or family affliction. If you expect to or have to miss the final exam for any of these reasons, please notify the instructor as soon as possible and produce supporting documentation. You must also fill out a Request for Academic Concession (RAC) form, available online (<https://www.uvic.ca/registrar/assets/docs/record-forms/rac.pdf>).

Travel plans are not a valid reason for missing either of the exams.

Please bring your UVic One Card or other photo ID to both the midterm and the final exam.

The Biology Department does not offer supplemental final exams.

Grading

Grades are submitted as percentages.

Grade conversion

A+ 90-100%; A 85-89.5%; A- 80-84.5%; B+ 77-79.5%; B 73-76.5%; B- 70-72.5%;
C+ 65-69.5%; C 60-64.5%; D 50-59.5%; F <49.5%

In determining final grades for the course, we will round your course score to the nearest whole percent. That is the official course grade that will be submitted for you.

We cannot change your grade for any reason, except if we have made an error calculating it. There is no extra work that you can do to raise your grade.

Please do not ask us to raise your percent grade in order to qualify you for a higher letter grade. We turn down all such requests.

If you do not write the final exam and lack an excuse, the grade submitted for you will be an N.

To pass the course, you must

- 1) write the midterm exam OR the deferred **midterm** exam
- 2) write the **final** exam
- 3) meet the minimum **lab** attendance requirement (students cannot miss, for any reason, more than TWO laboratories)
- 4) score a grade of 50% or greater, in the **Laboratory** component
- 5) score a grade of 50% or greater, in the **Lecture** component.

If any of 1 through 3 are not completed, students will automatically fail the course and receive an "N" ('Incomplete course requirements') on their transcript. An N is a failing grade, and it factors into a student's GPA as O. The maximum percentage that can accompany an N on a student's transcript is 49. If students successfully complete 1 through 3, but is not successful in either 4 or 5, they will receive an "F" on their transcript.

General Outline of planned Lecture Topics

Behavioural laterality – left brain versus right brain

Historical approaches to the study of behaviour

Nervous system and behaviour diversity among animal phyla

Parsing behaviour: genetic, epigenetic, hormonal, environmental

Animal communication and sensory exploitation

Defences against predators

Optimal foraging, zoopharmacognosy (self-medication)

Cephalopod behaviour

Sociality, cooperation, altruism

Empathy, self-awareness, consciousness

Evolution of play

Course Policies

UVic is a professional environment. Please be mindful of your peers and instructors. Please treat people around you with respect and courtesy, focus on active **listening and taking (handwritten) notes**. Please avoid distracting behaviour like eating three-course meals, watching sports games,

online shopping, or texting during lecture time. **Off – task activities** like checking email, text messaging, checking social network sites, are **negatively affecting students' grades by more than 10%** (Sana *et al.* 2013, *Computers and education* 62, 24-31). Therefore: **turn off your off – task apps/programs and disable notifications during class time and study time so you can focus without being distracted!**

Students are expected to **observe UVic academic regulations and standards of scholarly integrity** especially with regards to plagiarism and cheating. Please check out this link: <https://www.uvic.ca/library/help/citation/plagiarism/>. When writing exams students are prohibited from sharing any information about the exam with others or from capturing or recording (screen shots) exam questions.

Students are not allowed to use any online resources including artificial intelligence (AI) tools for assignments and during exams.

Your continued presence in this course, after the first day of class, means that you have read and understood these rules, and have agreed to abide by them.

General UVic Regulations and Resources

Please read the appropriate section of the current UVic Academic Calendar regarding your rights and obligations.

<https://www.uvic.ca/calendar/future/undergrad/index.php#/policies?expanded=Undergraduate%20Academic%20Regulations>

It is your responsibility to be aware of ADD/DROP dates published in the Calendar and ***to check your records and registration status; you will not be dropped automatically from the course if you do not attend.***

Important Dates

May 13: first day of Biol345 lectures

May 15/16: first Biol345 laboratory session

May 20: Victoria Day – no Biol345 lecture

May 31: fees deadline for summer

June 3: Biol345 midterm exam

June 10: First registration date for Winter Session 2024/2025

June 27: Biol345 final exam

Stay Healthy!

Take care of yourself! Do your best to maintain a healthy lifestyle this semester by eating well, exercising, getting enough sleep, and taking some time to relax. Human societies have respected one day of rest in a 7-day week over hundreds of years. Taking one day off per week seems essential for your mental health and overall wellbeing. Avoid last minute study panic by working regularly throughout the term: we recommend that you spend at **least 1-2 hours studying after each lecture!** This will help you achieve your goals and cope with stress. If you are not feeling well, stay at home.

Resources at UVic to maintain a healthy student life:

- If you have any **technical issues** using Brightspace, please contact the **computer help desk** via email (helpdesk@uvic.ca)

- **Support Connect:** offers short term solution focused counselling, available 24/7 help by phone or online. Supported by counsellors, consultants and life coaches.
<https://www.uvic.ca/student-wellness/wellnessresources/supportconnect/index.php>
- **Student Wellness Centre** to support students' mental, physical and spiritual health by a team of counsellors, nurses, physicians, spiritual care providers.
<https://www.uvic.ca/student-wellness/index.php>
- **Centre for Accessible Learning (CAL):** promote educational accessibility for students with disabilities and chronic health conditions. The sooner you let us know your needs the quicker we can assist you in achieving your learning goals in this course.
<https://www.uvic.ca/accessible-learning/index.php>
- **Office of Indigenous Academic and Community Engagement (IACE)** has the privilege of assembling a group of Elders from local communities to guide students, staff, faculty, and administration in Indigenous ways of knowing and being. Supporting Indigenous students.
<https://www.uvic.ca/services/indigenous/>
- **Office of Student life:** student conduct, first year experience, student mental health, sexualized violence awareness,... : <https://www.uvic.ca/services/studentlife/index.php>
- **Student support services:** the office of registrar helps with academic concession, fee reduction appeals, room bookings,...<https://www.uvic.ca/registrar/students/index.php>
- **Sexualized Violence Prevention and support:** how to start conversations about consent, support on and off campus <https://www.uvic.ca/sexualizedviolence/>
- **UVic Bounce:** Stories about resilience and how we stand up again after falling.
<https://uvicbounce.ca/>

UVic is committed to promoting, providing and protecting a supportive and safe learning and working environment for all its members.

We hope that you will enjoy a great term with Animal Behaviour!

End of Biol345 Course Outline.