



## ZOO\*4070 Animal Behaviour

Fall 2019

Section(s): C01

Department of Integrative Biology

Credit Weight: 0.50

Version 1.00 - June 13, 2019

---

### 1 Course Details

#### 1.1 Calendar Description

This course provides an introduction to the theories and principles of the behaviour of animals. It includes comparative studies of learning, socialization, social interaction, and other components of animal behaviour.

**Pre-Requisites:** BIOL\*2400, (STAT\*2040 or STAT\*2230)

#### 1.2 Course Description

This course will explore the scientific theories and methods used to understand how and why animals behave the way they do. Using a variety of case studies and in-class discussions, we will examine ecological and evolutionary perspectives for the diversity of behaviour in wild animals, as well as the genetic and sensory-motor mechanisms behind the development and maintenance of these behaviours. Class will consist of a mixture of lectures, discussions, demonstrations and audio-visual presentations. Students will be required to take an active role in class and will be responsible for reading scientific literature that accompanies the lecture material. A major component of the course will be an independent small-group project that will involve creating a study, developing hypotheses and predictions, collecting data in the field or lab, and presenting results in a conference-style poster format among peers.

#### 1.3 Timetable

Lectures: Monday, Wednesday, Friday

11:30AM - 12:20PM

ROZH, Room 103

## 1.4 Final Exam

Exam time and location is subject to change. Please see WebAdvisor for the latest information.

---

## 2 Instructional Support

### 2.1 Instructional Support Team

<b>Instructor:</b>	Amy Newman
<b>Email:</b>	newman01@uoguelph.ca
<b>Telephone:</b>	+1-519-824-4120 x56595
<b>Office:</b>	SC1 1467
<b>Office Hours:</b>	By Appointment

---

## 3 Learning Resources

### 3.1 Required Resources

#### Courselink (Website)

Course website: This course will make use of the University of Guelph's course website on D2L (via Courselink). Consequently, you are responsible for all information posted on the Courselink page for ZOO\*4070. Please check it regularly.

### 3.2 Recommended Resources

#### Textbooks (Textbook)

Textbook: Lectures will not follow a specific textbook. However, there are several required readings from **Sherman, P.W., and J. Alcock. 2013. Exploring Animal Behavior: Readings from American Scientist (6<sup>th</sup> edition) Sinauer Associates, Sunderland, MA.** The reader can be purchased at the bookstore OR individual articles (see list below) can accessed on-line through the UG library. American Scientist is a popular magazine so the articles are written in an accessible manner. The content of the readings will not be covered in detail during the lectures but each reading is connected to a specific lecture topic. In preparation for tests, students are required identify connections between the content of the readings and material covered in class, particularly how the theories discussed in lectures apply to the articles.

Optional study guides: The following textbooks could be consulted as study guides: 1. Alcock, J. 2013. **Animal Behavior, An Evolutionary Approach**. Sinauer Associates, Sunderland, MA. (9<sup>th</sup> or 10<sup>th</sup> edition). 2. Dugatkin, L.A. 2009. **Principals of Animal Behavior**. W.W. Norton & Company. (2<sup>nd</sup> or 3<sup>rd</sup> edition). Many of the general concepts and theories covered in class are in these textbooks so you may find them helpful if you need clarification. However, you will find that some specifics covered in the lectures (e.g. examples from different species, mathematical equations) may be missing from one or both of these sources so it is best to not rely on these solely to prepare for tests. Two copies of each textbook will be on reserve in the library.

## 4 Learning Outcomes

### 4.1 Course Learning Outcomes

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

1. understand and critically evaluate major theories in animal behaviour
2. apply the scientific method to study behaviour
3. apply evolutionary theory to understand how and why animals behave the way they do
4. asses and discriminate both proximate and ultimate elements of animal behaviour
5. create and design an independent study examining a type of behaviour
6. collect and analyze behavioural field data
7. communicate science to your peers and to the public

## 5 Teaching and Learning Activities

### 5.1 Lecture

Fri, Sep 6

**Topics:** Course intro & project overview

**Week 1**

**Topics:** Approaches to studying behaviour I

In-class group projects

Approaches to studying behaviour II

**REQUIRED readings from "Exploring Animal Week Date Topic Behavior: Readings from The American Scientist":**  
Why male ground squirrels disperse (pp 38-45)

## **Week 2**

**Topics:** Evolution & behaviour I

In-class group projects

Evolution & behaviour II

**REQUIRED readings from "Exploring Animal Week Date Topic Behavior: Readings from The American Scientist":**  
Evolution for the good of the group (pp 79- 89)

## **Week 3**

**Topics:** Altruism & inclusive fitness I

In-class group projects

Altruism & inclusive fitness II

**REQUIRED readings from "Exploring Animal Week Date Topic Behavior: Readings from The American Scientist":**  
Physiology of helping in scrub... (pp 275- 282)

## **Week 4**

**Topics:** Eusociality I

In-class group projects

Eusociality II

**REQUIRED readings from "Exploring Animal Week Date  
Topic Behavior: Readings from The American Scientist":  
Naked mole-rats (pp 107-117)**

**Week 5**

**Topics:** No class - holiday

In-class group projects

Cooperation I

**REQUIRED readings from "Exploring Animal Week Date  
Topic Behavior: Readings from The American Scientist":  
None**

**Week 6**

**Topics:** Cooperation II

In-class group projects

Mid-term

**REQUIRED readings from "Exploring Animal Week Date  
Topic Behavior: Readings from The American Scientist":  
Why ravens share (pp 99-106)**

**Week 7**

**Topics:** Parental care I

In-class group projects

Parental care II

**REQUIRED readings from "Exploring Animal Week Date Topic Behavior: Readings from The American Scientist":**  
Avian siblicide (pp 184-195)

**Week 8**

**Topics:**

Habitat use I

In-class group projects

Habitat use II

**REQUIRED readings from "Exploring Animal Week Date Topic Behavior: Readings from The American Scientist":**  
None

**Week 9**

**Topics:**

Territoriality & Foraging

In-class group projects

Poster presentation & statistics

**REQUIRED readings from "Exploring Animal Week Date Topic Behavior: Readings from The American Scientist":**  
None

**Week 10**

**Topics:**

Caching & memory

In-class group projects

Anisogamy & sexual selection

**REQUIRED readings from "Exploring Animal Week Date Topic Behavior: Readings from The American Scientist":**  
The strategies of human mating (pp 196-208)

## Week 11

**Topics:** Alternative reproductive tactics

Sperm Competition

Female Choice

**REQUIRED readings from "Exploring Animal Week Date Topic Behavior: Readings from The American Scientist":**  
Shaping brain sexuality (pp 283-294), Why do bowerbirds build bowers? (pp 233-238)

## Week 12

**Topics:** Class poster presentations

# 6 Assessments

## 6.1 Assessment Details

### Midterm (20%)

**Date:** Fri, Oct 18

**Course Content/Activity:** Lectures and readings

**Learning Outcome(s) Addressed:** 1, 2, 3, 4

### Term Project (55%)

**Proposal (10%)** - due September 27

**Poster content and presentation (30%)** - presented in-class November 25, 27, 29

**Evaluation by group member (10%)** - due November 30

**Evaluation of another poster (5%)** - in-class November 25, 27, 29

**Learning Outcome(s) Addressed:** 1, 2, 3, 4, 5, 6, 7

**Course Content/Activity:** Lectures and outside class time

**Final Exam (25%)**

Exam time and location is subject to change. Please see WebAdvisor for the latest information.

**Learning Outcome(s) Addressed:** 1, 2, 3, 4

**Course Content/Activity:** Lectures and readings

---

## 7 Course Statements

### 7.1 Course Content

Lectures will be composed of case studies, group discussions, and interactive demonstrations designed to engage and familiarize students with the major theories in animal behaviour and the diversity of behaviours found in wild animals. Both the mid-term and final will be primarily short and long answer with a few multiple-choice questions. Both tests will be designed to test your critical thinking skills rather than simply recall basic information, so students will be required to develop a deep understanding of concepts rather than memorize specific types of behaviours. **The mid-term will cover material presented from the start of class to the end of the Oct 14 and the final will cover material presented from Oct 21 to Nov 22** (although students will be required to know major concepts presented in the first part of the course).

In addition to a mid-term and a final, students will undertake a term-long project in groups of 5 people. The project provides an authentic, hands-on experience in the scientific study of animal behaviour by requiring students to conduct independent research from start to finish. Students will conceive of and design a study, collect data in the field, analyze and interpret the data, and then present their results to their peers and the public in the form of a poster. This project is designed to evaluate your critical thinking skills, ability to formulate hypotheses and predictions, collect and analyze data, and present results in a professional manner. Full details about the project will be provided in the **Sept 6 lecture** (and possibly carry over to the following lecture) and a complete marking rubric and additional information will be posted on the Courselink course site. Students will also be provided



weekly in-class opportunities for consultation with instructors and TAs and a chance to do focused group work. Later in the term, we will discuss details of poster design and presentation.

## 8 Department of Integrative Biology Statements

### 8.1 Academic Advisors

If you are concerned about any aspect of your academic program:

- Make an appointment with a program counsellor in your degree program. [B.Sc. Academic Advising](#) or [Program Counsellors](#)

### 8.2 Academic Support

If you are struggling to succeed academically:

- Learning Commons: There are numerous academic resources offered by the Learning Commons including, Supported Learning Groups for a variety of courses, workshops related to time management, taking multiple choice exams, and general study skills. You can also set up individualized appointments with a learning specialist. <http://www.learningcommons.uoguelph.ca/>
- Science Commons: Located in the library, the Science Commons provides support for physics, mathematic/statistics, and chemistry. Details on their hours of operations can be found at: <http://www.lib.uoguelph.ca/get-assistance/studying/chemistry-physics-help> and <http://www.lib.uoguelph.ca/get-assistance/studying/math-stats-help>

### 8.3 Wellness

If you are struggling with personal or health issues:

- Counselling services offers individualized appointments to help students work through personal struggles that may be impacting their academic performance. <https://www.uoguelph.ca/counselling/>
- Student Health Services is located on campus and is available to provide medical attention. <https://www.uoguelph.ca/studenthealthservices/clinic>
- For support related to stress and anxiety, besides Health Services and Counselling Services, Kathy Somers runs training workshops and one-on-one

sessions related to stress management and high performance situations.  
<http://www.uoguelph.ca/~ksomers/>

## 9 University Statements

### 9.1 Email Communication

As per university regulations, all students are required to check their e-mail account regularly: e-mail is the official route of communication between the University and its students.

### 9.2 When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. The grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Academic Consideration and Appeals

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>

Graduate Calendar - Grounds for Academic Consideration

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

### 9.3 Drop Date

Courses that are one semester long must be dropped by the end of the fortieth class day; two-semester courses must be dropped by the last day of the add period in the second semester. The regulations and procedures for course registration are available in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml>

Graduate Calendar - Registration Changes

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/genreg-reg-regchg.shtml>

### 9.4 Copies of Out-of-class Assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

### 9.5 Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required; however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance and not later than the 40th Class Day.

More information can be found on the SAS website  
<https://www.uoguelph.ca/sas>

## 9.6 Academic Integrity

The University of Guelph is committed to upholding the highest standards of academic integrity, and it is the responsibility of all members of the University community—faculty, staff, and students—to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff, and students have the responsibility of supporting an environment that encourages academic integrity. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

Undergraduate Calendar - Academic Misconduct  
<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>

Graduate Calendar - Academic Misconduct  
<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

## 9.7 Recording of Materials

Presentations that are made in relation to course work - including lectures - cannot be recorded or copied without the permission of the presenter, whether the instructor, a student, or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

## 9.8 Resources

The Academic Calendars are the source of information about the University of Guelph's procedures, policies, and regulations that apply to undergraduate, graduate, and diploma

programs.

Academic Calendars

<https://www.uoguelph.ca/academics/calendars>

---