

University of Guelph
College of Biological Science
Department of Integrative Biology
COURSE OUTLINE
Animal Behaviour, ZOO*4070
FALL 2016

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.

Credit: **0.50**

Pre-requisites: **STAT*2040 or STAT*2230, 1 of BIOL*2400, BIOL*3400 or ZOO*3300**

Teaching team

Dr. Ryan Norris, ext 56300, rnorris@uoguelph.ca, Office: 2451 SSC
office hours: Mon 12:30-3:30, Thurs 2:30-4:00

Teaching Assistants:
Alex Sutton, asutto01@uoguelph.ca, Office: 2444 SSC
office hours: Tues 9:30-11, Wed 2:30-4:00

Second Teaching Assistant: T.B.A.

Lecture Schedule

11:30-12:20, MWF*, RICH2520

*there is a class scheduled on Friday, Dec 2 to make up for the Thanksgiving holiday
Note: there are no labs for this course.

Learning Objectives

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

Course Resources

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* (6th edition) Sinauer Associates, Sunderland, MA.** The reader can be purchased at the bookstore OR individual articles (see list below) can be 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 to 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. (9th or 10th edition). 2. Dugatkin, L.A. 2009. ***Principals of Animal Behavior***. W.W. Norton & Company. (2nd or 3rd 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.

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.

Undergraduate calendar: is the source of information about the University of Guelph's procedures, policies and regulations, which apply to undergraduate programs. It can be found at: <http://www.uoguelph.ca/registrar/calendars/undergraduate/current/>

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 ***The mid-term will cover material presented from the start of class to the end of the Oct 17*** memorize specific types of behaviours. ***lecture and the final will cover material presented from Oct 24 to Nov 25*** (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 9 lecture (and possibly carry over to the following lecture)*** and a complete marking rubric and additional information will be posted on the Blackboard 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.

Week	Date	Topic	REQUIRED readings from "<i>Exploring Animal Behavior: Readings from The American Scientist</i>"
0	Sept 9	Course intro & project overview	
1	Sept 12	Approaches to studying behaviour	Why male ground squirrels disperse (pp 38-45)
	Sept 14	In-class group projects	
	Sept 16	Evolution & behaviour	Evolution for the good of the group (pp 79-89)
2	Sept 19	Evolution & behaviour	Yawning (pp 128-136)
	Sept 21	In-class group projects	
	Sept 23	Altruism & inclusive fitness I	Physiology of helping in scrub... (pp 275-282)
3	Sept 26	Altruism & inclusive fitness II	
	Sept 28	In-class group projects	
	Sept 30	Eusociality	Nake mole-rats (pp 107-117)
4	Oct 3	Cooperation I	Why ravens share (pp 99-106)
	Oct 5	In-class group projects	
	Oct 7	Cooperation/Parental care I	Avian siblicide (pp 184-195)
5	Oct 10	No class - holiday	
	Oct 12	In-class group projects	
	Oct 14	Parental care II	
6	Oct 17	Parental care III	
	Oct 19	In-class group projects	
	Oct 21	Mid-term	
7	Oct 24	Parental care III	
	Oct 26	In-class group projects	
	Oct 28	Habitat use & territoriality I	
8	Oct 31	Habitat use & territoriality II	
	Nov 2	In-class group projects	
	Nov 4	Migration	
9	Nov 7	Poster presentation & statistics	
	Nov 9	In-class group projects	
	Nov 11	Caching & spatial memory	The strategies of human mating (pp 196-208)
10	Nov 14	Anisogamy & sexual selection	Shaping brain sexuality (pp 283-294)
	Nov 16	In-class group projects	
	Nov 18	Alternative reproductive tactics	Animal genitali & female choice (pp 157-165)
11	Nov 21	Sperm competition	Why do bowerbirds build bowers? (pp 233-238)
	Nov 23	In-class group projects	
	Nov 25	Female choice	
12	Nov 28	Class poster presentations	
	Nov 30	Class poster presentations	
	Dec 2	Class poster presentations	

Full list of readings

All readings are from “American Scientist”. The reader “*Exploring Animal Behavior: Readings from American Scientist (6th edition)*” is available at the bookstore. However, although it is nice to have the reader as a resource (and it’s not that expensive), individual articles can also be downloaded via the UG website **for free**. Just copy the title of each article into the UG library search engine and you will find it (confirm it is the correct article via author names and the fact that it was published in American Scientist).

Lecture date	Title of article	Author(s)
Sept 12	<i>Why male ground squirrels disperse</i>	KE Holekamp, PW Sherman
Sept 16	<i>Evolution for the good of the group</i>	D Wilson, EO Wilson
Sept 19	<i>Yawning</i>	R Provine
Sept 23	<i>Physiology of helping in Florida scrub Jays</i>	S Schoech
Sept 30	<i>Naked mole rats</i>	RL Honeycutt
Oct 3	<i>Why ravens share</i>	B Heinrich, J Marzluff
Oct 7	<i>Avian siblicide</i>	DW Mock et al.
Nov 11	<i>The strategies of human mating</i>	DM Buss
Nov 24	<i>Shaping brain sexuality</i>	AH Bass
Nov 18	<i>Animal genitalia and female choice</i>	WG Eberhard
Nov 21	<i>Why do bowerbirds build bowers?</i>	G Borgia

Methods of Assessment

Form of Assessment	Weight of Assessment	Date(s)	Learning Outcomes Addressed	Course Activity
1. Mid-term	20%	Oct 21	1,2,3,4	Lectures & readings
2. Term project				
Proposal	10%	Sep 28	2,3,4,5	Lectures & outside class time
Poster content & presentation	30%	Nov 28,30, Dec 2	2,3,4,5,6,7	Lectures & outside class time
Evaluation by group members	10%	Dec 2	2,3,4,5,6,7	Lectures & outside class time
Evaluation of another poster	5%	Nov 28,30, Dec 2	1,4,7	Lectures
3. Final Exam	25%	Dec 10	1,2,3,4	Lectures & readings

Important Dates

Sep 28	Proposal for term project due
Oct 10	No-class – holiday
Oct 21	Mid-term
Nov 4	Course drop deadline (40 th class day)
Nov 28, 30, Dec 2	Poster presentations for term projects + peer evaluations
Dec 10	Final Exam

Course & University Policies

Grading

Proposals are to be handed in via the courselink website. Late penalty is 10% per day. Poster presentations will occur on Nov 28, 30, Dec 2 and will be graded after the end of the class period. Peer reviews of posters are due at the end of class, either on Nov 28, 30, Dec 2, depending on which day you are assigned to perform the peer review. Failure to show for the poster presentations will result in a 20% penalty for that individual and failure to hand in peer evaluations will result in a mark of zero.

****All projects must be approved by the instructor prior to collecting data.** No students are to collect data before they receive approval, via email, from the instructor that they meet standards regarding either humans ethics or animal care. Failure to comply will result in an *automatic mark of zero*.

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, and be prepared to provide supporting documentation. See the undergraduate calendar for information on regulations and procedures for Academic

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

Accessibility

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact the Centre for Students with Disabilities as soon as possible. For more information, contact CSD at 519-824-4120 ext. 56208 or email csd@uoguelph.ca or see the website: <http://www.csd.uoguelph.ca/csd/>

Academic Misconduct

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 discourages misconduct. 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.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar:

<http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>

E-mail Communication

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

Drop Date

The last date to drop one-semester courses, without academic penalty, is the 40th class day (**Nov 4**, 2016 for Fall 2016 semester). To confirm the actual date please see the schedule of dates in the Undergraduate Calendar. For regulations and procedures for Dropping Courses, see: <http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml>

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.

Recording of Materials

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

Use of Animals

The University is committed to principles of conducting research and teaching in accord with the highest ethical standards. Given that the use of animals in research and teaching is a critical aspect of the work of the University of Guelph, the Department of Integrative Biology is committed to minimizing the use, pain, and suffering of animals used for teaching and to ensuring that animals which are used will receive care and treatment that meets or exceeds the standards outlined by provincial guidelines and statutes, and by the Guidelines of the Canadian Council on Animal Care. For more information http://www.uoguelph.ca/research/assets/acs/docs/university_animal_care_policy_and_procedures.pdf

Campus Resources

The Academic Calendar is the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs: <http://www.uoguelph.ca/registrar/calendars/index.cfm?index>

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

- make an appointment with a program counsellor in your degree program.
<http://www.bsc.uoguelph.ca/index.shtml> or
<https://www.uoguelph.ca/uaic/programcounsellors>

If you are struggling to succeed academically:

- 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/>

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/>

If you have a documented disability or think you may have a disability:

- The Centre for Students with Disabilities (CSD) can provide services and support for students with a documented learning or physical disability. They can also provide information about how to be tested for a learning disability. For more information, including how to register with the centre please see: <https://www.uoguelph.ca/csd/>