University of Guelph

College of Biological Science

Integrative Biology

COURSE OUTLINE

Animal Behaviour, ZOO*4070

Fall 2014

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, at times, will be responsible for reading scientific literature prior to attending. 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 poster format.

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 Science Complex
Office hours: Mon, Thurs 2:30-4:30

Teaching Assistants:
Erin Siracusa, esiracus@uoguelph.ca, office hours: Friday 9:30-12:30
Lisa Harris, lharri07@uoguelph.ca

Schedule

1:30-2:20, MWF*, Alexander Hall 200
*there is a class scheduled on Thurs, Nov 27 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**. See schedule below for a list of readings. American Scientist is a popular magazine so the articles are written in an accessible manner. Although the content of the readings will not be covered in detail during the lectures, each reading is connected to a specific lecture topic (see schedule below). In preparation for the mid-term and final exam, 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 issues discussed in the articles. In addition to the bookstore, two copies of this reader will be put on the reserve in the library.

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). The majority 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 a 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 15 lecture and the final will cover material presented from Oct 20 to Nov 21 (although students will be required to know major concepts presented in the first part of the course).

In addition to a mid-term and 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 third lecture and a complete marking rubric and additional information will be posted on the Blackboard course site. Throughout the term, you will also be provided several 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 "*Exploring Animal Behavior: Readings from The American Scientist*"
0	**Sept 5**	Introduction to the course	
1	**Sept 8**	Approaches to studying beahviour	**Why male ground squirrels disperse (p 38-45)**
	Sept 10	Independent project overview	
	Sept 12	Evolution & natural selection	**Evolution "for the good of the group" (p 79-89)**
2	**Sept 15**	Animal behaviour at high speed	
	Sept 17	**In-class group projects**	
	Sept 19	Ultimate foundations: sex and lies	**Protecting ourselves from food (pp 249-258)**
3	**Sept 22**	Proximate foundations: hormones & behaviour	**Testosterone & agression in birds (pp 268-274)**
	Sept 24	**In-class group projects**	
	Sept 26	Proximate foundations: the brain & behaviour	**A bigger, better brain (pp 358-365)**
4	**Sept 29**	Altrusim & inclusive fitness	**Physiology of helping in scrub... (pp 275-282)**
	Oct 1	**In-class group projects**	
	Oct 3	Altrusim & inclusive fitness	
5	**Oct 6**	Eusociality	**Nake mole-rats (pp 279-289)**
	Oct 8	**In-class group projects**	
	Oct 10	Eusociality & Cooperation	**Why ravens share (pp. 260-267)**
6	**Oct 13**	**No class - holiday**	
	Oct 15	Cooperation	
	Oct 17	**Mid-term**	
7	**Oct 20**	Habitat use & optimal foraging	
	Oct 22	**In-class group projects**	
	Oct 24	Animal Personalities: report from the field	
8	**Oct 27**	Anisogamy & parental investment	**The srategies of human mating (pp 244-255)**
	Oct 29	Sex ratios & polyandry	
	Oct 31	Sperm competition	**Shaping brain sexuality (pp 125-136)**
9	**Nov 3**	Female choice	**Why do bowerbirds build bowers? (pp 233-238)**
	Nov 5	**In-class group projects**	
	Nov 7	Female choice/Posters & statisitics	**Bird song and the problem…(pp 312-319)**
10	**Nov 10**	Ecology of mating systems	**Prairie vole partnerships (pp 176-183)**
	Nov 12	Parental care	**Avian siblicide (pp 184-195)**
	Nov 14	Parental care	
11	**Nov 17**	Tool use: report from the field	
	Nov 19	Migration	
	Nov 21	Behaviour & conservation	
12	**Nov 24**	**Class poster presentations**	
	Nov 26	**Class poster presentations**	
	Nov 27	**Class poster presentations**	

Methods of Assessment

Form of Assessment	Weight of Assessment	Date(s)	Learning Outcomes Addressed	Course Activity
Mid-term	**25%**	Oct 17	1,2,3,4	Lectures & readings
Term project				
Proposal	**7%**	Oct 3	2,3,4,5	Lectures & outside class time
Poster content & presentation	**30%**	Nov 24,26,27	2,3,4,5,6,7	Lectures & outside class time
Evaluation by group members	**7%**	Nov 27	2,3,4,5,6,7	Lectures & outside class time
Evaluation of another poster	**1%**	Nov 24,26,27	1,4,7	Lectures
Final Exam	**30%**	Dec 3	1,2,3,4	Lectures & readings

Important Dates

Oct 3	Proposal for term project due
Oct 13	No-class – holiday
Oct 17	Mid-term
Oct 30	Course drop deadline (40th class day)
Nov 24,26,27	Poster presentations for term projects + peer evaluations
Dec 3	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 24, 26 & 27 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 24, 26 or 27, 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 (**Oct 30**, 2014 for Fall 2014 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/