

# Course Outline Form: Fall 2017

## General Information

**Course Code:** ANSC\*4090

**Course Title:** Applied Animal Behaviour

### **Course Description:**

This course deals with why domesticated and confined animals behave as they do with reference to causation (including neurobiological mechanisms), function, ontogeny and phylogeny. Basic principles are usually illustrated by examples taken from common domesticated and confined species. Emphasis is placed on the application of behavioural knowledge to improve captive environments and animal production systems, as well as to understand behavioural problems like aggression or anxiety. Designing housing, facilities and management procedures to suit the behaviour of the animals in question is also covered.

**Credit Weight:** 0.5

**Academic Department (or campus):** Department of Animal Biosciences

**Campus:** Guelph

**Semester Offering:** Fall

**Class Schedule and Location:** Tuesday & Thursday 10:00 am - 11:20 am, room 214, J. Powell building

## Instructor Information

Instructor Name: Professor Georgia Mason

Instructor Email: [gmason@uoguelph.ca](mailto:gmason@uoguelph.ca)

Instructor Phone and Extension: x. 56804

Office location and office hours: 138 ANNU; office hours by appointment

## GTA Information

GTA Name: Aitor Arrazola

GTA Email: [aarrazol@uoguelph.ca](mailto:aarrazol@uoguelph.ca)

GTA office location and office hours: 106 ANNU, hours by appointment

GTA Name: Andrea Polanco

GTA Email: [apolanco@uoguelph.ca](mailto:apolanco@uoguelph.ca)

GTA office location and office hours: 103 ANNU, hours by appointment

GTA Name: Ivelisse Robles

GTA Email: [irobles@uoguelph.ca](mailto:irobles@uoguelph.ca)

GTA office location and office hours: 218 ANNU, hours by appointment

## **Course Content**

### **Specific Learning Outcomes:**

1. Explain how animal behaviour and putative mental states can be rigorously studied using scientific methods, and how this knowledge can be applied to animals under human care to the benefit of both parties.
2. Apply knowledge of lecture material to different contexts from those expressly presented in class.
3. Integrate the concepts and knowledge taught during lectures with the knowledge based on students' own literature reviews, thus demonstrating deep learning.
4. Utilize new ethological vocabulary appropriately and be able to discriminate between scientifically accurate descriptions of animals' capacities and mere anthropomorphism.
5. Collaborate effectively with others by combining individual knowledge of an area of literature into a fully comprehensive review of a complex behavioural issue. As a group students should also be able to present this information in way that is practically meaningful to a specific animal-user group.
6. Evaluate and explain the relevance of published work in the context of their own research interests/chosen topics and be able to create hypotheses of their own in cases where research data do not exist yet.
7. Effectively and systematically perform a literature search for primary research articles related to their own chosen topics using online databases such as Web of Science.

**Lecture Content:**

<b>Lect.</b>	<b>Date</b>	<b>Topic</b>
<b>1</b>	Thurs 7 <sup>th</sup> Sept.	<p><b><u>Introduction, overview, &amp; methods:</u></b></p> <p><b>Why study behaviour?</b> Introduction to the course: outline of applications of knowledge of behaviour; the history of ethology; ethology on campus</p> <p><b>Levels of explanation: Why do animals behave as they do?</b> The causation, function, ontogeny and phylogeny of behaviour: what they are, and how they complement each other; introduction to your assignments</p>
<b>2</b>	Tues 12 <sup>th</sup> Sept.	<p><b>How animal behaviour is studied</b> How do scientists turn the complexity and flow of behaviour into data suitable for objective, quantitative analysis?</p>
<b>3</b>	Thurs 14 <sup>th</sup> Sept.	<p><b><u>Key concepts:</u></b></p> <p><b>I. Motivation</b> What determines whether an animal will do any given behaviour, how long s/he performs it for, and at what rate?</p>
<b>4</b>	Tues. 19 <sup>th</sup> Sept.	<p><b>II: Learning</b> How does experience affect behavior via learning? Different types of learning. How learning and motivation inter-relate to determine behaviour.</p>
<b>5</b>	Thurs. 21 <sup>st</sup> Sept.	<p><b>III: Animal consciousness and animal emotions</b> Do animals have emotions and moods? Are they consciously aware? If they do, what roles do these have in the control of behaviour?</p>
<b>6</b>	Tues. 22 <sup>nd</sup> Sept.	<p><b><u>The machinery of behaviour:</u></b></p> <p><b>The brain: the master controller of behaviour</b> How the brain makes the decisions that underlie behaviour, and produces the outputs needed to elicit and control muscle action</p>
<b>7</b>	Thurs. 26 <sup>th</sup> Sept.	<p><b>Senses I: Detecting distant stimuli</b> Sensory and perceptual capacities: the signals processed by the brain (vision, hearing, olfaction, and other senses).</p>
<b>8</b>	Tues. Oct. 3 <sup>rd</sup>	<p><b>Senses II: Detecting near stimuli; Sensory processing by the CNS</b> Touch, taste and the vomeronasal organ; Sensory processing by the mid- and forebrains</p>
<b>9</b>	Thurs. 5 <sup>th</sup>	<p><b>Hormones, neurotransmitters and behaviour.</b> The effects that hormones &amp; neurotransmitters can have on behavioural systems:</p>

<b>Lect.</b>	<b>Date</b>	<b>Topic</b>
	Oct.	e.g. mating, maternal care, foraging and aggression.
<b>10</b>	Tues. 10th Oct.	<b><u>No class today (Thanksgiving Break)</u></b>
<b>11</b>	Thurs. 12 <sup>th</sup> . Oct	<b><u>Behavioural development:</u></b>  <b>Behavioural development I:</b> Life stages and behaviour -- how and why behaviour patterns change over the course of an animal's life
	Tues. 17 <sup>th</sup> Oct.	<b>Behavioural development II:</b> How early experiences affects later behaviour; e.g. pre-natal stress, imprinting and other effects
<b>12</b>	Thurs. 19 <sup>th</sup> <sup>th</sup> Oct.	<b><u>Genetics, phylogeny &amp; ultimate function:</u></b>  <b>The evolution of behaviour</b> How and why do behaviors evolve in the wild? Studying the ultimate functions of behaviors.
<b>13</b>	Tues. 24th Oct.	<b>Genetics and phylogeny II:</b> <b>The 'domestication' of behaviour</b> Characteristics of domesticated animals
	Thurs. 26th Oct.	'Catch up' lecture if over-run in previous weeks; revision Q & A  <b>MID-TERM (take home) posted up at 1pm</b>
<b>14</b>	Tues. 31 <sup>st</sup> Oct	<b><u>Three worked examples:</u></b>  <b>Learning abilities and intelligence I</b> What internal and external factors affect leaning rates and intelligence? And what developmental factors are important?
<b>15</b>	Thurs. 2nd Nov.	<b>Learning abilities and intelligence II</b> What are the functions of being intelligent? What are the functions of learning? How and why has it evolved? How does domestication affect it?
<b>16</b>	Tues. 7 <sup>th</sup> Nov.	<b>Courtship and mating I</b> How and why do animals choose their mates and copulate? Causation and development
<b>17</b>	Thurs. 9 <sup>th</sup> Nov.	<b>Courtship and mating II</b> How and why do animals choose their mates and copulate? Function and evolution/genetics

<b>Lect.</b>	<b>Date</b>	<b>Topic</b>
<b>18</b>	Tues. 14 <sup>th</sup> Nov.	<b>Stereotypic behaviors I</b> An introduction to stereotypies and similar behaviors. What are their causal factors, and how are they shaped by age and experience?
<b>19</b>	Thurs. 16 <sup>th</sup> Nov.	<b>Stereotypic behaviors II</b> Are these abnormal behaviors dysfunctional, and/or do they have consequences? How are they shaped by an animals' genotype?
<b>20</b>	Tues. 21st Nov.	<b><u>Applied ethology and animal welfare:</u></b> <b>Pain and sickness</b> What does behaviour tell us about injury, infection and malaise?
<b>21</b>	Thurs. 23rd Nov.	<b>Depression and anxiety</b> Can animals experience depression or anxiety? How is are behavioural indicators used to validate and understand these mental states?
<b>22</b>	Tues. 28 <sup>th</sup> Nov	<b>Environmental enrichment</b> The rewarding nature of satisfaction; the aversive nature of frustration; meeting animals' motivations to improve their welfare
	Thurs Nov 30th	<b>POSTER SHOW and EVALUATION</b> sessions; also during other times this week (details TBA)

**Labs:**

None

**Seminars:**

None

## Course Assignments and Tests:

See above for numbered learning outcomes.

Assignment or Test	Due Date	Contribution to Final Mark (%)	Learning Outcomes Assessed
10 multiple choice questions, approximately one per week	To be set each week	10	All
Annotated Bibliography	October 8th	5	3, 6, 7
Mid-Term Exam	October 26th	25	2, 4
Final Paper	November 14th	20	2, 3, 4, 6, 7
Poster Presentation	TBA	15	1, 2, 3, 4, 5
Final Exam	December 8th	25	1,2,4

Last day of class; **final exam posted up (take home) Friday 1<sup>st</sup>.**

To be returned for grading between 10am and noon, **Friday 8<sup>th</sup>** (hand in location: room 106)

### Final exam weighting:

The final exam is worth 25% of the overall grade for the course.

## Course Resources

### Required Texts:

None

### Recommended Texts:

For the fundamentals of ethology, we recommend the following:

Manning, A. & Dawkins, M.S., 1992. (3rd ed or more recent) An Introduction to Animal Behaviour. (Cambridge University Press).

McFarland, D. 1993. Animal Behaviour– Psychobiology, Ethology & Evolution. (Longman)

Alcock, J., 2005. Animal Behaviour: an Evolutionary Approach. (Sinauer)

Bolhuis, J. & Giraldeau, L.–A., 2006. The Behaviour of Animals (Blackwell)

For applied ethology, we recommend:

Broom, D.M. & Fraser, A.F., 2007. Domestic Animal Behaviour and Welfare (4th ed;

CABII)

Houpt, K. A. 2004. Domestic Animal Behavior for Veterinarians and Animal Scientists (4th ed; Blackwell)

Fraser, D. 2008. Understanding Animal Welfare: the Science in its Cultural Context (UFAW/Blackwells)

Appleby, M. et al. 2011. Animal Welfare (2nd ed.; CABI)

Mason, G. & Rushen. R. 2006. Stereotypic Behaviour in Captive Animals. (2nd ed. CABI).

Jensen, P. (2009). The Ethology of Domestic Animals: An Introductory Text (CABI)

**We also recommend avoiding lay books and websites (i.e. anything written for the general public by people without research experience in the study of animal behaviour).**

**Lab Manual:**

None

**Other Resources:**

CourseLink will be used to disseminate all course information including: lecture slides prior to class, supplementary readings, grades, and any additional information regarding course content and proceedings (e.g. lecture schedules, due dates, course syllabus, etc.). In addition, message boards will be set up for students to ask questions to their peers and/or course instructor.

**Field Trips:**

None

**Additional Costs:**

Students will be responsible for printing one poster per group of four students. These can be printed by the Chemistry Department for around \$30. (Posters can also be hand-made instead).

**Course Policies**

**Grading Policies:**

The annotated bibliography is due on October 8th, 2015 by the end of class at 11:20 am in the lecture hall. There will be no late submissions accepted for this assignment.

The mid-term exam will be on October 26, 2015, and is take home. It will be posted 10am that day, and must be returned by 10am following Monday. The TAs will grade this exam.

Final papers will be due on November 14th, 2015 by the end of class at 11:20 am in the lecture hall. Late papers will be penalized by 10% of the paper grade (2% of the overall course grade) for every two days they are late.

Posters will be due to room 106 ANNU on a specified time and date in the last week of class (TBA). Late posters will not be graded. This is a group assignment and all group members will receive the same grade, and as such should contribute equal work to the project. In the case this does not happen, group members will confidentially weight the contributions of all group members and at the instructor's discretion some group members may receive a reduced grade. Any groups experiencing difficulty are encouraged to contact the instructors as early as possible so the situation can be resolved prior to grading. TAs will grade this assignment.

The final exam is a take home exam that will be made available for download on CourseLink on December 1. The exam is due back to room 106 ANNU between 10:00AM and noon on December 8th. Late exams will not be accepted. The TAs will grade this exam.

#### **Course Policy on Group Work:**

The poster assignment is a group assignment that students will complete in groups of 4. Groups will be formed at the start of the semester with each group focusing on an applied ethology 'problem'. Within groups, each student will tackle one of Tinbergen's 'four whys' individually (the focus of their final paper) and then they will combine their knowledge into one comprehensive message (the poster) to be presented to a specific 'target audience'. All group members will receive the same grade for this assignment barring exceptional circumstances or within group conflict (see above for resolution of this issue).

#### **Course Policy regarding use of electronic devices and recording of lectures:**

Electronic recording of classes is expressly forbidden without the consent of the instructor. When recordings are permitted they are solely for the use of the authorized student and may not be reproduced, or transmitted to others, without the express written consent of the instructor.

## **University Policies**

### **Academic Consideration:**

The University of Guelph is committed to supporting students in their learning experiences and responding to their individual needs and is aware that a variety of situations or events beyond the student's control may affect academic performance. Support is provided to accommodate academic needs in the face of personal difficulties or unforeseen events in the form of Academic Consideration.

Information on regulations and procedures for Academic Consideration, Appeals and Petitions, including categories, grounds, timelines and appeals can be found in [Section VIII \(Undergraduate Degree Regulations and Procedures\) of the Undergraduate Calendar](#).

### **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.

Detailed information regarding the Academic Misconduct policy is available in [Section VIII \(Undergraduate Degree Regulations and Procedures\) of the Undergraduate Calendar](#).

### **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 Student Accessibility Services (SAS), formerly Centre for Students with Disabilities (CSD), as soon as possible.

For more information, contact SAS at 519-824-4120 ext. 56208 or email [sas@uoguelph.ca](mailto:sas@uoguelph.ca) or visit the [Student Accessibility Services website \(http://www.uoguelph.ca/csd/\)](http://www.uoguelph.ca/csd/).

### **Course Evaluation Information:**

End of semester course and instructor evaluations provide students the opportunity to have their comments and opinions used as an important component in the Faculty Tenure and Promotion process, and as valuable feedback to help instructors enhance the quality of their teaching effectiveness and course delivery.

While many course evaluations are conducted in class others are now conducted online. Please refer to the [Course and Instructor Evaluation Website](#) for more information.

### **Drop period:**

The drop period for single semester courses starts at the beginning of the add period and extends to the Fortieth (40th) class day of the current semester (the last date to drop a single semester courses without academic penalty) which is listed in [Section III \(Schedule of Dates\) of the Undergraduate Calendar](#).

The drop period for two semester courses starts at the beginning of the add period in the first semester and extends to the last day of the add period in the second semester.

Information about Dropping Courses can be found in [Section VIII \(Undergraduate Degree Regulations and Procedures\) of the Undergraduate Calendar](#).

### **Additional Course Information**

None.