



# BIOS3011 Animal Behaviour

T2 2022






**Animal Behaviour** provides one of the most fascinating and rewarding fields of biological study. In this course, we briefly introduce the science of animal behaviour and the levels at which it can be investigated. We then spend the bulk of the course focussing on the adaptive evolution of animal behaviour and how ecological processes shape such behaviour. This course has a strong focus on contemporary research in the content of lectures, video stories from the field and solicited case studies from world experts. The course also has a heavy emphasis on the practical applications of how animal behaviour can be studied through both observation and experimentation, and its relevance to real-world challenges.

The course has the following aims and learning outcomes:

- To introduce the broad approaches used to study Animal Behaviour.
- To consider the proximate genetic, neurobiological, physiological and environmental influences on behaviour.
- To introduce the concepts and tools necessary to build a sophisticated understanding of the evolution of behaviour.
- To explore the important insights that an adaptive perspective on human behaviour can provide.
- To emphasise the importance of primary research in student learning by devoting a portion of the course to case studies presented by practising scientists.
- To provide an introduction to the use of formal mathematical models to understand adaptive behaviour.
- To provide foundational training in the methods used to quantify behaviour and how those skills can be applied to address real-world situations.
- To critically evaluate primary research, how that research is depicted in the media and the challenges faced in presenting science in a meaningful way to the public.


# Course Components

## Lectures

There is a series of 14 **Lectures** in which your educators introduce important issues and topics in the study of animal behaviour, illustrated with examples from a broad range of taxa. Some of these lectures compliment material in the recommended textbook, but be aware that most lectures cover material that is unique from that text. This is because all of your educators have an extensive—and current—knowledge of the field of animal behaviour through their respective research programs. This experience is of far greater value to your learning and training than can be provided by any textbook. Most lectures will come with suggested additional reading (listed during lecture), which can be accessed online free through the UNSW library or directly on .

Lectures are the basis of an assessed Q&A forum engagement task that runs throughout the course (see below). Lectures are released in module sets at midnight on the Sunday that starts each module and remain available until the end of the course.

## Lecture Q&A Forum [32% of total course mark]

You will be randomly assigned to a forum group of 10-15 students and remain in that group for the duration of the course. You will need to **record a brief video** introducing yourself to the rest of your group and upload this video into the media library on the course's  page that will be the front face of the **Lecture Q&A Forum**. This video could mention a TV show you're watching at the moment, a book you're reading, or some other favourite activity—anything! This video task is designed to allow other members of the group to put a face to the name and instil a better sense of community and engagement that will ultimately help you and your group mates fulfil the objectives of this forum task.

Lectures are grouped into 4 **modules**. The Q&A Forum associated with each module will remain open for a fixed period of 2-3 weeks (see course schedule). During that period, and for each of the four *lecture* modules, you should:

- Post at least **2 questions** related to the content of the lectures within that module. Each question is worth 2 marks (total of **4 marks per module**). A question must be coherently presented and show clear engagement with the content of lectures.
- Post at least **2 answers** to questions posted by other students in the group. Each answer is worth 2 marks (total of **4 marks per module**). Students can answer the same question if they differ in their answers or otherwise offer different viewpoints.

- Use the '**rate**' function to provide feedback on questions or answers that you were unclear on or felt were particularly thoughtful or informative. This will help you and your group mates identify the topics and answers that were areas of shared interest and were felt to be especially helpful. Your participation in using the '**rate**' function will be monitored to provide justification on whether your final mark can be bumped up if you happen to lie just outside of a particular grade cut-off.

Q&A Forums for each module open midnight Sunday to coincide with the release of lectures for that module and closes 2-3 weeks later at midnight Sunday, at which time the next module will become active.

NOTE: The forum is specific to the lectures presented by your educators and not the case study talks, which are the basis of a separate assessment task (see next section).

The educator who delivered the lectures for a given module will monitor the Q&A Forums. Once the forum for that module has closed, this educator will post any clarifications that might be needed for a given discussion point, or provide an answer to an important question that has remained unanswered.

There are several objectives to this Q&A:

- It is an opportunity for students to demonstrate their grasp of the lecture content, both through the type of questions posted and answers provided.
- It builds a collaborative learning environment that has been shown to improve the learning experience for individual students as well as their comprehension, retention and extrapolation of concepts taught.
- It increases student engagement, not only with the learning materials, but also with a student's peer-group, which is so often lacking in an online learning environment.
- It provides educators with a way of identifying concepts that students are struggling with and a means of providing further instruction or clarification on those concepts.
- The Lecture Q&A Forum replaces the need for a final exam (yay!).

### **Animal Behaviour in Practice [18% of total course mark]**

As part of the research-focussed approach to this course, this component showcases the application of animal behaviour in the practice of actually doing research and how animal






behaviour relates to the real-world, from its relevance to conservation through to understanding our own behaviour.


There are two parts:


**Case Studies [8 marks]:** We have solicited a series of 6 **Case Studies** from world experts on various aspects of animal behaviour. These experts all have PhDs in evolutionary biology, ecology, physiology or psychology. Each case study is released weekly at midnight on Sunday, starting week 2.

These case studies focus on the presentation of a scientists' own research and contain a mix of practical and theoretical insights.

Pick at least one case study out of the six and submit an individually written review of a published **research article** (not a review article or opinion article). The selected research article must be clearly related to the topic. The review should be no more than 400 words and submitted using the  link on  by midnight the following Sunday (i.e., 1 week after the case study has been released). Standard school policies on late submissions will apply.

You have the opportunity to maximise your mark for this assessment by selecting a second case study and submitting another review on a research article related to its topic. Whichever of the two case studies has the highest mark will be your final mark for this assessment. Note, this second case study must be different from the submission of your first report and must be submitted within the 1 week window from its release on .



Detailed instructions, expectations and a link to submit are given on the instruction sheet posted with each case study on .


**Video "Lectures From The Field" [10 marks]:** A series of 5 **"Lectures From The Field"** videos will be released at midnight Sunday on  at fortnightly intervals to coincide with a related topic being presented during the lectures. These video stories have been specifically designed for the course to illustrate how the concepts taught relate to real-world research. The videos also showcase the

different methods that can be used to study the behaviour of free-ranging animals, which complements the training you'll receive through the course's practicals.

Videos are short and end with a multiple-choice quiz question. You will have two opportunities to answer this question correctly, with questions drawn randomly from a pool of possible questions. Each question is worth **2 marks**. We expect you to watch each video in the week it is released.

### **Practicals [marked for completion]**


There are 5 **Practicals** that we expected you to complete in weeks 1-5. The first practical is released midnight Sunday at the start of week 1. The remaining practicals are released consecutively at weekly intervals (from midnight Sunday). Some, but not all, practicals can be completed at your own pace during the week they are released. There will be an opportunity to ask questions or get extra instruction on exercises during a live drop-in session with an educator. The date and time of these drop-in sessions is advertised on  and will typically fall within the Wednesday 1-3pm time windows. Drop-in sessions will be conducted via . Please come at the start of the drop-in session prepared with a specific question to ask. If all the students present in the session have had their questions answered, your educator may close the session early.



Other practicals will require specific online attendance for participation: students will need to log on to  at **1pm Wednesday June 15 2022 in week 3** in order to register completion for practical 3.


In order to pass this course, you must have **registered a completion for all practicals**.


### **Book Review [20% of total course mark]**

You are expected to read at least 1 recent popular science book that has some relevance to *Animal Behaviour*. This task is designed to stimulate general reading and broad thinking about the relevance of animal behaviour to society, other aspects of biology, and the human condition. We are hoping that this part of the course will show you that reading for pleasure can be an important part of your ongoing learning as a scientist.

Each reviewed book must be approved via email by Professor Brooks (who is responsible for marking this assignment), unless it appears on the list of recommended books found in the instructions that accompany this assessment task on . Check there first before sending an email!

The review is to be submitted through the  link on . Your review must answer the questions listed in the instructions rather than providing a generic book review.

Please remember that you are always obliged to submit your own, original work (see plagiarism policy on ). You need to submit at least one review at any time before **Midnight, Sunday 17 July 2022 (Week 8)**. You may review up to three books in separate reviews, in which case you will be given the highest of the marks. Only reviews submitted before the deadline will be marked.

Please read the detailed instructions that relate to this assessment before attempting this task. These instructions are found on .

### **Science Behind The Documentary [30% of total course mark]**

Nature documentaries are meant to be entertainment, but the best documentaries educate the viewer as well. This balance between popular engagement and an accurate scientific presentation of natural phenomena is key to cultivating a sense of value and appreciation in the general public for both the natural world and the scientific study of it.

In this assignment, you will pull back the curtain of entertainment to reveal the science. You will leverage your skills of observation to identify behaviour in a popular nature documentary. You will then review the scientific research behind an aspect of the behaviour shown and evaluate how that scientific knowledge has been used to present the behaviour seen in the documentary. You have a choice from 10 highly-rated documentaries.

The assignment is in two parts:

Part 1: Audit behaviour in a popular nature documentary **[4 marks]** and identify the associated concepts being depicted **[4 marks]**.

Due: **Midnight, Sunday 26 June 2022.**



Part 2: Review the published research behind one of those concepts **[15 marks]** and re-evaluate its presentation in the documentary through a layperson translation of that science **[7 marks]**.

Due: **Midnight, Sunday 7 August 2022.**

The list of documentaries and detailed instructions for this assignment are provided on



## Course Educators and Contacts



Prof Rob Brooks  
[rob.brooks@unsw.edu.au](mailto:rob.brooks@unsw.edu.au)  
[robbrooks.net](http://robbrooks.net)  
Lecturer, instructor



Dr Suzy Evans  
[s.evans@unsw.edu.au](mailto:s.evans@unsw.edu.au)  
Senior Technical Officer



A/Prof Terry Ord  
[t.ord@unsw.edu.au](mailto:t.ord@unsw.edu.au)  
[eerc.unsw.edu.au/ord](http://eerc.unsw.edu.au/ord)  
**Course coordinator,**  
lecturer, instructor



A/Prof Lisa Schwanz  
[l.schwanz@unsw.edu.au](mailto:l.schwanz@unsw.edu.au)  
[liskaschwanz.weebly.com](http://liskaschwanz.weebly.com)  
Lecturer, instructor

## Course Accessibility

### Captioning and Subtitling

To improve the accessibility of the course, most of the video content comes with options for **English Captioning**, **Simplified Chinese Subtitling** and **Traditional Chinese Subtitling**. We recognise that there will be students coming from other language backgrounds, and that the current Chinese subtitling is not perfect. These options are offered as a pilot for potential future expansion to other languages and improved translation. In the interim, the Englishing captioning is highly accurate and we hope that this option in itself will facilitate the learning experience of all students taking the course. Please reach out to Terry ([t.ord@unsw.edu.au](mailto:t.ord@unsw.edu.au)) if you have any thoughts or recommendations for other strategies that might improve the accessibility of the course.

## Platforms Used

All learning materials

Moodle



Drop-in sessions

Blackboard Collaborate Ultra



Live Practicals

Blackboard Collaborate Ultra

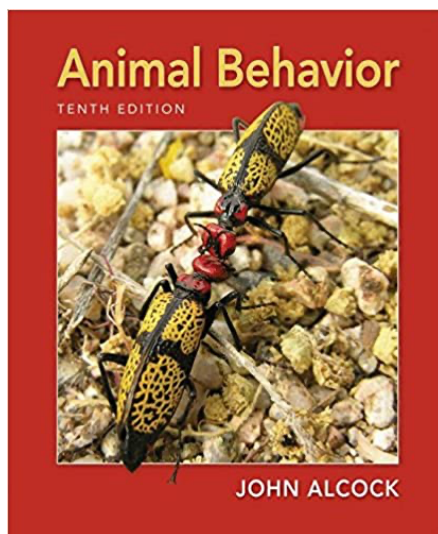


Zoom



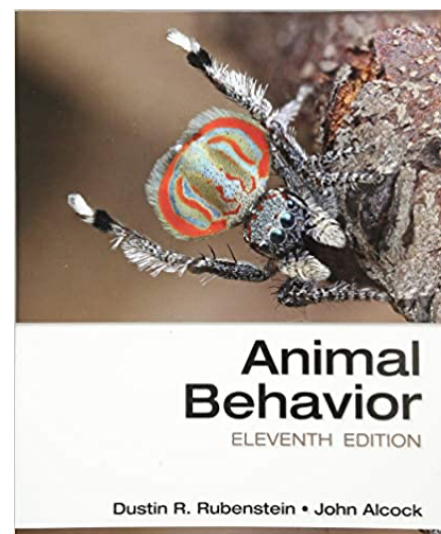
## Recommended Reading

There is **no required textbook** and you are not obliged to purchase any external text. But if you would like a reference for some of the content of this course, these texts are useful:



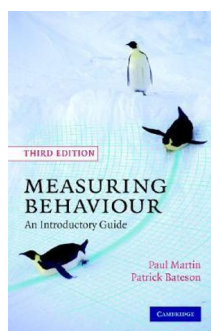
Alcock J (2013) Animal Behavior  
10<sup>th</sup> edition Sinauer Oxford Uni Press

OR

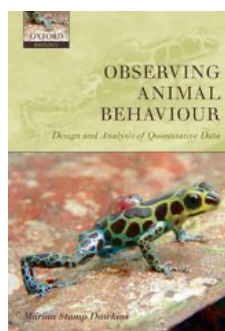


Rubenstein, DR & Alcock J (2018) Animal  
Behavior, 11<sup>th</sup> edition Oxford Uni Press

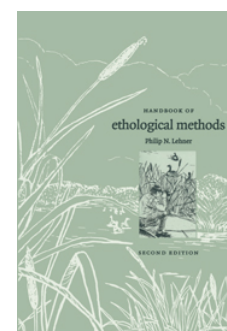
If you'd like more information on the methods used to study animal behaviour beyond what is covered in the course, these texts are useful:



Martin P & Bateson P (2007)  
Measuring Behaviour: An  
Introductory Guide.  
Cambridge Uni Press



Stamp Dawkins M (2007)  
Observing Animal  
Behaviour: Design and  
Analysis of Quantitative  
Data. Oxford Uni Press



Lehner PN (1998) Handbook of  
Ethological Methods. 2<sup>nd</sup>  
edition, Cambridge Uni Press

## Breakdown of Marks

Task	Marks / Course total %
<b>Animal Behaviour in Practice</b>	
Case study write-up	8
Lectures from the Field multiple-choice (2 marks each)	10
<b>Book review</b>	
Review	20
<b>Lecture Q&amp;A Forum</b>	
Module 1	8
Module 2	8
Module 3	8
Module 4	8
<b>Science Behind the Documentary</b>	
Part 1	8
Part 2	22
Total: 100	

## Assessment Dates

Task	Due date
<b>Animal Behaviour in Practice</b>	
Case study write-up	Varied: starting wk 2, ending wk 8 (midnight Sunday, one week <u>after</u> chosen case study is released)
Lectures from the Field Quizzes	Any time before midnight of Sunday 7 August wk 10
<b>Book review</b>	By midnight Sunday 17 Jul, wk 7
<b>Lecture Q&amp;A Forum</b>	Varied: midnight Sunday at the close of each lecture module
<b>Science Behind the Documentary</b>	
Part 1	By midnight Sunday 26 June, wk 4
Part 2	By midnight Sunday 7 August, wk 10



## Course Schedule

	Lectures + Q&A Forum	Case study talks (review due 1 week later)	Video "lectures from the field"	Practicals
Week 1 May 30- June 5	Module 1 L0: Course overview (Ord) L1: Proximate and ultimate (Ord) L2: Neuroethology (Ord) L3: Finding a mate (Ord)		V1: Behaviour of ectotherms + quiz	P1: Quantifying behaviour through observation (Ord) +drop-in session (Ord)
Week 2 June 6-12		CS1: Conservation behaviour (Prof Blumstein, UCLA)		P2: Studying behaviour with camera traps (Ord) +drop-in session (Ord)
Week 3 June 13-19		CS2: Development and human attractiveness (Dr Foo, UWA)	V2: Mate choice and ornaments + quiz	P3: Learning through conditioning (Kasumovic) <b>LIVE</b>
Week 4 June 20-26	Module 2 L4: Parental care (Schwanz) L5: Feeding & foraging (Schwanz) L6: Predation (Schwanz) L7: Learning (Schwanz)	CS3: Cognition, social learning and foraging (Dr Noble, ANU)		P4: Optimality models (Schwanz)  +drop-in session (Schwanz)
Week 5 June 27- July 3		CS4: Cognition, danger and management (Dr Griffin, UoN)	V3: Predation and conspicuous behaviour + quiz	P5: Game theory (Brooks)  +drop-in session (Brooks)
Week 7 July 11-17	Module 3 L8: Nature vs nurture (Brooks) L9: Evolution of behaviour (Brooks) L10: Cooperation (Brooks) L11: Social behaviour (Brooks)	CS5: Origins of cooperation (Dr Livia Gerber, UNSW)	V4: Animal communication + quiz	
Week 8 July 18-24		CS6: Communication and sociality (Prof Todd Freeberg, UT)		
Week 9 July 25-31  Week 10 August 1-7	Module 4 L12: Communication (Ord) L13: Conflict (Ord) L14: Behaviour and the fossil record (Ord)		V5: Aggression and play + quiz	