



BBE 200

Animal Behaviour

S2 Day 2014

Dept of Biological Sciences

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General Information

Unit convenor and teaching staff

Unit Convenor

Jennifer Clarke-Mackessy

jennifer.clarke@mq.edu.au

Contact via jennifer.clarke@mq.edu.au

Other Staff

Katherine McClellan

katherine.mcclellan@mq.edu.au

Contact via katherine.mcclellan@mq.edu.au

Credit points

3

Prerequisites

BBE100 or BBE101 or BIOL108 or BIOL114 or PSY104 or PSY105 or PSYC104 or PSYC105

Corequisites

Co-badged status

Unit description

This unit explores the fascinating world of animal behaviour, searching out unifying principles that underlie the extreme diversity of nature. Why do birds and bees sing and dance? What keeps families together? How do animals find food? How do animals with very different sensory systems find their way about? This unit briefly explores the physiological and neural mechanisms underpinning behaviour, and then focuses on the function and evolution of natural behaviour. Lectures explore the natural behaviour of diverse animal species, from insects to humans, using instructive examples to illustrate evolution, navigation, foraging, predator–prey interactions, mating systems, mate choice, conflict, communication, and social behaviour. Practical work involves observation of the behaviour of avian and invertebrate species, hypothesis development, data collection, and analysis.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

Learning Outcomes

On successful completion of this unit, you will be able to:

Describe how genetic factors influence animal behaviour

Describe how environmental (learning/experience) factors influence animal behaviour.

Understand how genetic and environmental factors interact in influencing animal behavior.

Analyse data collected in laboratory practical and in field practicals.

Evaluate published research in animal behaviour

Create an ethogram – from films and direct observations of animal behaviour

Design a testable hypotheses and predictions regarding animal behaviour.

Analyse the research on a selected topic in animal behaviour using primary scientific literature.

Create an oral presentation communicating the most important results and conclusions from the primary scientific literature regarding a selected topic in animal behaviour.

General Assessment Information

ASSESSMENT IN THIS UNIT **Important: Assessments are to be submitted through Turn-it-in.**

Ethogram draft (3%): During the practical, you will observe the behaviours of various species (e.g. Tasmanian devils, dingoes, grey-headed flying-foxes, North American elk) from films. You will design an ethogram based on these films.

Article summary (5%): You will select a research article from 2013-2014 from the journal ANIMAL BEHAVIOUR and write a two-page summary/critique. The article can be (but is not required to be) on the topic you are considering presenting in your oral presentation. Details regarding this assignment are posted on iLearn.

Mid-semester test (20%): This is a multiple-choice and short answer exam covering material in the first half of the course. You will sit the exam during the regular lecture hour – in the lecture classroom.

Experiment: Hypothesis, predictions re stress and thigmotaxis: (4% and 6%) You will conduct two series of experiments investigating thigmotaxis in animals and submit your hypotheses, predictions, tables and figures of the results and a conclusion.

Ethogram report (10%): You will collect data on the behaviour of one species of resident birds on campus. Based on these data, you will design an ethogram. You will then submit a three page report of your findings with tables and figures. Details regarding this assignment are posted on iLearn.

Oral presentation (10% for the presentation +2% for attendance = 12%): You will present (6 minute talk) an aspect of animal behaviour research that you find particularly interesting using power-point slides during the practical. This exercise is designed to help you develop your communication skills and your ability to synthesize and present material. You are required to attend these presentations and ask questions.

Final exam (40%): The final exam will be 2 hr (plus 10 min reading time). Notes will not be permitted. The exam questions have been carefully written to test understanding. You will need to be able to apply behavioural principles to solve: (A) multiple choice questions where you will be asked to interpret figures and tables and synthesise information, (B) short answer questions where you will be asked to integrate behavioural concepts you have learnt during the course.

Extensions and penalties 10% of the mark allocated for the assignment will be deducted per day that any work is submitted late.

Returning assessment tasks Assessment tasks will be marked by tutors and returned during the practicals.

Assessment Tasks

Name	Weighting	Due
<u>Article Summary</u>	5%	Sat 23 August
<u>Ethogram draft</u>	3%	Sat 30 Aug
<u>Mid-semester test</u>	20%	18 Sep
<u>Ethogram report Due</u>	10%	Sat 13 Sep
<u>Hypothesis, predictions, table</u>	4%	Sat 18 oct
<u>Hypotheses, tables & Conclusio</u>	6%	Sat 1 Nov
<u>Oral Presentation</u>	12%	6 & 7 Nov and 13 & 14 Nov
<u>Final Exam</u>	40%	Exam period

Article Summary

Due: **Sat 23 August**

Weighting: **5%**

2 page summary/critique of Animal Behaviour article 2013/2014

On successful completion you will be able to:

- Understand how genetic and environmental factors interact in influencing animal behavior.
- Analyse data collected in laboratory practical and in field practicals.

Ethogram draft

Due: **Sat 30 Aug**

Weighting: **3%**

Ethogram draft based on practical work

On successful completion you will be able to:

- Evaluate published research in animal behaviour

Mid-semester test

Due: **18 Sep**

Weighting: **20%**

This is a multiple-choice and short answer exam.

On successful completion you will be able to:

- Describe how genetic factors influence animal behaviour
- Describe how environmental (learning/experience) factors influence animal behaviour.
- Understand how genetic and environmental factors interact in influencing animal behavior.

Ethogram report Due

Due: **Sat 13 Sep**

Weighting: **10%**

design an ethogram using data you collect on the behaviour of one species of birds on campus.

On successful completion you will be able to:

- Evaluate published research in animal behaviour

Hypothesis, predictions, table

Due: **Sat 18 oct**

Weighting: **4%**

Description of prac findings with tables and figures

On successful completion you will be able to:

- Create an ethogram – from films and direct observations of animal behaviour
- Design a testable hypotheses and predictions regarding animal behaviour.

Hypotheses, tables & Conclusio

Due: **Sat 1 Nov**

Weighting: **6%**

submit your hypotheses, predictions, tables and figures of the results and conclusions

On successful completion you will be able to:

- Create an ethogram – from films and direct observations of animal behaviour
- Design a testable hypotheses and predictions regarding animal behaviour.

Oral Presentation

Due: **6 & 7 Nov and 13 &14 Nov**

Weighting: **12%**

Oral presentation (10% for the presentation + 2% for attendance = 12%): 6 Minute talk.

On successful completion you will be able to:

- Analyse the research on a selected topic in animal behaviour using primary scientific literature.
- Create an oral presentation communicating the most important results and conclusions from the primary scientific literature regarding a selected topic in animal behaviour.

Final Exam

Due: **Exam period**

Weighting: **40%**

2 hr (plus 10 min reading time). Notes will not be permitted.

(A) multiple choice questions B) short answer questions

On successful completion you will be able to:

- Describe how genetic factors influence animal behaviour
- Describe how environmental (learning/experience) factors influence animal behaviour.
- Understand how genetic and environmental factors interact in influencing animal behavior.

Delivery and Resources

Convenor

Dr. Jennifer A. Clarke Office: W19F-149 Email: jennifer.clarke@mq.edu.au Tutors

Eloise Deaux - Eloise.deaux@gmail.com

Naila Even naila.even@gmail.com

Pre-requisites – any one of the following: BBE 100, BBE 101, BIOL 108, BIOL 114, PSY 104, PSY 105

Timetable

Lecture 1 Wednesday 2:00-3:00 W5A T2

Lecture 2 Thursday 12:00-1:00 E7B T2

Lecture 3 Friday 12:00-1:00 E7B T2

Practical Thursday 10:00-12:00 F5A 428

Practical Thursday 1:00-3:00 F5A 428

Practical Friday 10:00-12:00 F5A 428

Practical Friday 1:00-3:00 F5A 428

You must attend the practical session in which you are enrolled and remain in that session, unless prior permission is obtained from a tutor or convenor to do otherwise. In the prac rooms: no food and no drink allowed and closed-toe shoes must be worn.

Unit description

Animal behaviour is an exciting and fascinating scientific discipline. In this course you will study why animals behave as they do – and you will have to discard many of your former ideas about other species' behaviour. You will discover that most species do not see, hear, smell, or experience the world as we do. Animal behavior is the scientific study of everything animals do, whether the animals are single-celled organisms, invertebrates, fish, amphibians, reptiles, birds, or mammals. It involves investigating the relationship of animals to their physical environment as well as to other organisms, and includes such topics as how animals find and defend resources, avoid predators, choose mates and reproduce, and care for their young.³ “Animal behavior studies are concerned with understanding the causes, functions, development, and evolution of behavior. The causes of behavior include both the external stimuli that affect behavior, and the internal hormonal and neural mechanisms that control behavior. The functions of behavior include its immediate effects on animals and its adaptive value in helping animals to survive or reproduce successfully in a particular environment. The development of behavior pertains to the ways in which behavior changes over the lifetime of an animal, and how these changes are affected by both genes and experience. The evolution of behavior relates to the origins of behavior patterns and how these change over generations (see: www.animalbehavior.org)”.

Unit completion requirements

Students must complete/submit each of the set assessment tasks and receive a final mark of >50% in order to pass this subject.

Each week you should: • Attend lectures, take notes, ask questions. • Attend your tutorial and participate in the class discussions. • Attend the practical session, and seek feedback from the practical demonstrator • Read the appropriate textbook assignments, add to your notes and prepare questions for your lecturer or tutor. • Prepare for next week's tutorial/prac.

Lecture graphics will be available on iLearn which you should use for: • Regularly checking announcements; • Downloading lecture materials; • Downloading reference materials; • Downloading films; • Downloading readings; • Checking your grades. How do you log in? The URL login page is: <http://learn.mq.edu.au/>. If you are having trouble accessing your online unit due to a disability or health condition, please go to the Student Services Website at <http://www.campuslife.mq.edu.au/campus-wellbeing> for assistance.

Textbook

Dugatin, L.A. 2014. Principles of Animal Behavior. 3rd Ed. W.W. Norton & Co, NY.

The text is available from the Co-op bookshop on campus and it is available in the library.

Unit Schedule

Week	Lecture	Practical	Assignment due
1	Introduction/Case study	NONE	-
2	Genes and Behaviour	Defining tool use: it is not as simple as it seems. Examples and discussion.	-
3	Sensory and Early Experience	Ethogram development	Article summary (5%)
4	Learning/Cultural Transmission	Navigation: Dance language of bees, Navigation: Exploring examples of migration behaviours	Ethogram draft (3%)
5	Migration/Navigation	Field data collection techniques	
6	Hormones/Territoriality	Ethogram field data collection	-
7	Thursday Mid-Term exam in class	Ethogram field data collection	-
	Mid-Semester Break		
8	Parental Care/ Cooperative Breeding	Experiment: Hypothesis, predictions re light and thigmotaxis	Ethogram report (10%)
9	Mating/Sexual Selection	Experiment: Hypothesis, predictions re light and thigmotaxis	Hypotheses, predictions, figures and tables (4%)

10	Communication	Experiment: Hypothesis, predictions re stress and thigmotaxis	-
11	Foraging, Anti-predator Behaviour	Experiment: Hypothesis, predictions re stress and thigmotaxis	Hypotheses, predictions, figures & tables (6%)
12	Play Behaviour	Oral presentations	Presentation and hardcopy (10%) and attend / participate (2%)
13	Personalities Conservation	Oral presentations	Presentation attendance and participate
Nov	Final Exam in Formal Exam Period		Final Exam (40%)

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](#). Students should be aware of the following policies in particular with regard to Learning and Teaching:

Academic Honesty Policy http://mq.edu.au/policy/docs/academic_honesty/policy.html

Assessment Policy <http://mq.edu.au/policy/docs/assessment/policy.html>

Grading Policy <http://mq.edu.au/policy/docs/grading/policy.html>

Grade Appeal Policy <http://mq.edu.au/policy/docs/gradeappeal/policy.html>

Grievance Management Policy http://mq.edu.au/policy/docs/grievance_management/policy.html

Disruption to Studies Policy http://www.mq.edu.au/policy/docs/disruption_studies/policy.html *The Disruption to Studies Policy is effective from March 3 2014 and replaces the Special Consideration Policy.*

In addition, a number of other policies can be found in the [Learning and Teaching Category](#) of Policy Central.

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/support/student_conduct/

Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to improve your marks and take control of your study.

- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module for Students](#)
- [Ask a Learning Adviser](#)

Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

IT Help

For help with University computer systems and technology, visit <http://informatics.mq.edu.au/help/>.

When using the University's IT, you must adhere to the [Acceptable Use Policy](#). The policy applies to all who connect to the MQ network including students.

Graduate Capabilities

Discipline Specific Knowledge and Skills

Our graduates will take with them the intellectual development, depth and breadth of knowledge, scholarly understanding, and specific subject content in their chosen fields to make them competent and confident in their subject or profession. They will be able to demonstrate, where relevant, professional technical competence and meet professional standards. They will be able to articulate the structure of knowledge of their discipline, be able to adapt discipline-specific knowledge to novel situations, and be able to contribute from their discipline to inter-disciplinary solutions to problems.

This graduate capability is supported by:

Learning outcomes

- Describe how genetic factors influence animal behaviour
- Describe how environmental (learning/experience) factors influence animal behaviour.
- Understand how genetic and environmental factors interact in influencing animal behavior.
- Analyse data collected in laboratory practical and in field practicals.
- Evaluate published research in animal behaviour
- Create an ethogram – from films and direct observations of animal behaviour
- Analyse the research on a selected topic in animal behaviour using primary scientific literature.

Assessment tasks

- Article Summary
- Ethogram draft
- Mid-semester test
- Ethogram report Due
- Hypothesis, predictions, table
- Hypotheses, tables & Conclusio
- Final Exam

Critical, Analytical and Integrative Thinking

We want our graduates to be capable of reasoning, questioning and analysing, and to integrate and synthesise learning and knowledge from a range of sources and environments; to be able to critique constraints, assumptions and limitations; to be able to think independently and systemically in relation to scholarly activity, in the workplace, and in the world. We want them to have a level of scientific and information technology literacy.

This graduate capability is supported by:

Learning outcomes

- Describe how environmental (learning/experience) factors influence animal behaviour.
- Analyse data collected in laboratory practical and in field practicals.
- Evaluate published research in animal behaviour
- Create an ethogram – from films and direct observations of animal behaviour
- Design a testable hypotheses and predictions regarding animal behaviour.
- Analyse the research on a selected topic in animal behaviour using primary scientific literature.

Assessment tasks

- Article Summary
- Mid-semester test
- Ethogram report Due
- Hypothesis, predictions, table
- Final Exam

Problem Solving and Research Capability

Our graduates should be capable of researching; of analysing, and interpreting and assessing data and information in various forms; of drawing connections across fields of knowledge; and they should be able to relate their knowledge to complex situations at work or in the world, in order to diagnose and solve problems. We want them to have the confidence to take the initiative

in doing so, within an awareness of their own limitations.

This graduate capability is supported by:

Learning outcomes

- Analyse data collected in laboratory practical and in field practicals.
- Create an ethogram – from films and direct observations of animal behaviour
- Design a testable hypotheses and predictions regarding animal behaviour.
- Analyse the research on a selected topic in animal behaviour using primary scientific literature.

Assessment tasks

- Ethogram draft
- Mid-semester test
- Hypothesis, predictions, table
- Hypotheses, tables & Conclusio
- Final Exam

Creative and Innovative

Our graduates will also be capable of creative thinking and of creating knowledge. They will be imaginative and open to experience and capable of innovation at work and in the community. We want them to be engaged in applying their critical, creative thinking.

This graduate capability is supported by:

Learning outcome

- Design a testable hypotheses and predictions regarding animal behaviour.

Assessment task

- Hypothesis, predictions, table

Effective Communication

We want to develop in our students the ability to communicate and convey their views in forms effective with different audiences. We want our graduates to take with them the capability to read, listen, question, gather and evaluate information resources in a variety of formats, assess, write clearly, speak effectively, and to use visual communication and communication technologies as appropriate.

This graduate capability is supported by:

Learning outcome

- Create an oral presentation communicating the most important results and conclusions from the primary scientific literature regarding a selected topic in animal behaviour.

Assessment tasks

- Ethogram draft
- Hypotheses, tables & Conclusio
- Oral Presentation

Changes from Previous Offering

We have implemented some changes to the unit: more extensive scientific literature assessment and pracs devoted to understanding and designing hypotheses and predictions.

Changes since First Published

Date	Description
06/08/2014	Updates for sem 2 2014
04/07/2014	updated mapping