



BBE 100

Introduction to Brain, Behaviour and Evolution

S1 Day 2014

Dept of Biological Sciences

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General Information

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Credit points

3

Prerequisites

Corequisites

Co-badged status

Unit description

The greatest show on the Planet. This unit is a suitable introductory science unit for all students. It offers an integrative approach to the amazing world of behaviour. Basic mechanisms are covered, together with function and evolution. Lecture topics include: micro- and macro-evolution; evolutionary origins of behaviour; basic neuroscience; learning, brain and behaviour; and topics in animal behaviour. Lectures culminate with some reflections on the lives of humans in our modern world and the role of culture in human evolution.

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 the basic functioning of the nervous system in animals, including the senses

Explain the principles of evolution by natural selection and sexual selection

Outline basic concepts and principles of animal communication, sexual selection, human evolution, genetics, epigenetics, learning, and the topics of animal behaviour presented in class

Extract and relate key theoretical ideas concerning the special topics on the evolution of human behaviour

Communicate clearly and logically scientific data in the style of a scientific paper

Extract key points from scientific papers and accurately communicate these to a general audience

Comment critically on scientific papers with regard to life on our Planet today

Assessment Tasks

Name	Weighting	Due
<u>Review questions</u>	11%	Weekly
<u>online test</u>	5%	week 4
<u>Lab exercise 1</u>	6%	Early: See unit guide
<u>Lab exercise 2</u>	7%	See unit guide
<u>Draft commentary</u>	1%	See unit guide
<u>Final commentary</u>	23%	Sunday 1 June 2014
<u>exam</u>	47%	final exam period

Review questions

Due: **Weekly**

Weighting: **11%**

For each week's lectures, a set of review questions are posted on the course web site. It is your task to download the questions, answer them, and upload them onto iLearn again. Due date for Week n review questions is end of Week $n+1$, defined as Sunday 23:55.

Late submissions will be given 10% of what each week's review questions are worth (i.e., 0.1 marks).

Sunday of Week 13 is last day for any submission to count at all.

On successful completion you will be able to:

- Describe the basic functioning of the nervous system in animals, including the senses

- Explain the principles of evolution by natural selection and sexual selection
- Outline basic concepts and principles of animal communication, sexual selection, human evolution, genetics, epigenetics, learning, and the topics of animal behaviour presented in class
- Extract and relate key theoretical ideas concerning the special topics on the evolution of human behaviour

online test

Due: **week 4**

Weighting: **5%**

The online test is more pedagogical than evaluative in practice. It consists of 10 multiple choice questions, and gives a flavour of the kind of question to expect on the final exam. The online test will concern lecture materials from Weeks 1 and 2.

On successful completion you will be able to:

- Describe the basic functioning of the nervous system in animals, including the senses
- Explain the principles of evolution by natural selection and sexual selection

Lab exercise 1

Due: **Early: See unit guide**

Weighting: **6%**

A library exercise to be done in the first prac, and summarising two papers

On successful completion you will be able to:

- Communicate clearly and logically scientific data in the style of a scientific paper

Lab exercise 2

Due: **See unit guide**

Weighting: **7%**

Exercise on reading graphs to be done in the second prac, and drawing a graph and writing a caption

On successful completion you will be able to:

- Communicate clearly and logically scientific data in the style of a scientific paper

Draft commentary

Due: **See unit guide**

Weighting: **1%**

The commentary article is a short news commentary on a recent article, meant as an opinion piece for a popular audience.

On successful completion you will be able to:

- Extract key points from scientific papers and accurately communicate these to a general audience
- Comment critically on scientific papers with regard to life on our Planet today

Final commentary

Due: **Sunday 1 June 2014**

Weighting: **23%**

The commentary article is a short news commentary on a recent article, meant as an opinion piece for a popular audience.

On successful completion you will be able to:

- Extract key points from scientific papers and accurately communicate these to a general audience
- Comment critically on scientific papers with regard to life on our Planet today

exam

Due: **final exam period**

Weighting: **47%**

The final exam consists of multiple-choice questions, on lectures from Week 3 to Week 13.

On successful completion you will be able to:

- Describe the basic functioning of the nervous system in animals, including the senses
- Explain the principles of evolution by natural selection and sexual selection
- Outline basic concepts and principles of animal communication, sexual selection, human evolution, genetics, epigenetics, learning, and the topics of animal behaviour presented in class
- Extract and relate key theoretical ideas concerning the special topics on the evolution of human behaviour

Delivery and Resources

Lectures

2 h per week live, Thursdays 2-4 at Mason Th or Fridays 1-3 at X5B T1, plus 1 h per week

recorded, found on iLearn

Practicals

Practicals take place every two weeks on Mondays and Tuesdays, 9-6, in E5A 220

One stream will run in Weeks 2, 4, 6, 8, 10, 12, while a second stream will run in Weeks 3, 5, 7, 9, 11, 13. Details of pracs will be supplied at each prac.

You must wear closed-in shoes to pracs. And no food or drinks allowed in labs for pracs.

Bring your laptop if you have one: you can use them during pracs and our supply is limited.

It is now University policy that the University issued email account will be used for official University communication. All students are required to access their University account frequently.

What is new this year?

A new lecture on human mating is featured, with a dynamo guest lecturer. We have a new edition of what is still a new textbook, now in its second year. The class is now oriented much more as a Planet unit. Two new writing assignments based on pracs have been designed. A good part of class time will feature live discussions based largely on thought-provoking video clips linking lecture topics to issues in our daily lives and in our society and world at large. And we are introducing a bit of fun in a mystery animal contest and a movie contest.

Unit Schedule

Lecture schedule

R = pre-recorded lecture, not given live in class but made in a 'studio'. They are on iLearn, and you should listen to these lectures on your own each week. In case of problems with the videos, contact your unit convenor via the dialogue link in iLearn.

Week	Lecture	Topic	Teacher
1	1.1	Overview and intro	Cheng
3 Mar-	1.2R	How science 'works'	Cheng

	1.3R	Ethics	Cheng
	1.4	Good study habits	Cheng
2	2.1R	Brief history	Taylor
10 Mar-	2.2	Tinbergen's explanations	Taylor
3	3.1	Darwin and Evolution	Taylor
17 Mar-	3.2R	Evolution on a small scale	Taylor
4	4.1R	Evolution on a large scale	Taylor
24 Mar-	4.2	Evolution of behaviour	Taylor
5	5.1R	Nervous system 1	Taylor
31 Mar-	5.2	Nervous system 2	Taylor
6	6.1R	Senses	Taylor
7 Apr-	6.2	Perception	Cheng
Midsemester break 14-27 April			
7	7.1	Genetics and epigenetics	Cheng

28 Apr-	7.2R	Learning: Basics	Cheng
8	8.1R	Cognitive approaches to learning	Cheng
5 May-	8.2	Animal behaviour 1	Cheng
9	9.1R	Communication	Taylor
12 May-	9.2	Sexual selection	Taylor
10	10.1R	Animal behaviour 2	Cheng
19 May-	10.2	Human evolution	Downey
11	11.1	Human mating	Sulikowski
26 May-	11.2R	Food and humans	Cheng
12	12.1R	Culture, altruism, morality	Cheng
2 Jun-	12.2	Rise of civilisation and its influence on the Planet	Cheng
13	13.1	Summary and review	Cheng
9 Jun-	13.2	Course song!	Cheng

Learning and Teaching Activities

Lectures online

See Unit Schedule

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 the basic functioning of the nervous system in animals, including the senses
- Explain the principles of evolution by natural selection and sexual selection
- Outline basic concepts and principles of animal communication, sexual selection, human evolution, genetics, epigenetics, learning, and the topics of animal behaviour presented in class
- Extract and relate key theoretical ideas concerning the special topics on the evolution of human behaviour
- Communicate clearly and logically scientific data in the style of a scientific paper
- Extract key points from scientific papers and accurately communicate these to a general audience
- Comment critically on scientific papers with regard to life on our Planet today

Assessment tasks

- Review questions
- online test
- Lab exercise 1
- Lab exercise 2
- Draft commentary
- Final commentary
- 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

- Extract and relate key theoretical ideas concerning the special topics on the evolution of human behaviour
- Comment critically on scientific papers with regard to life on our Planet today

Assessment tasks

- Draft commentary
- Final commentary
- exam

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 outcomes

- Communicate clearly and logically scientific data in the style of a scientific paper
- Extract key points from scientific papers and accurately communicate these to a general audience

- Comment critically on scientific papers with regard to life on our Planet today

Assessment tasks

- Lab exercise 1
- Lab exercise 2
- Draft commentary
- Final commentary

Engaged and Ethical Local and Global citizens

As local citizens our graduates will be aware of indigenous perspectives and of the nation's historical context. They will be engaged with the challenges of contemporary society and with knowledge and ideas. We want our graduates to have respect for diversity, to be open-minded, sensitive to others and inclusive, and to be open to other cultures and perspectives: they should have a level of cultural literacy. Our graduates should be aware of disadvantage and social justice, and be willing to participate to help create a wiser and better society.

This graduate capability is supported by:

Learning outcome

- Comment critically on scientific papers with regard to life on our Planet today

Assessment tasks

- Draft commentary
- Final commentary

Socially and Environmentally Active and Responsible

We want our graduates to be aware of and have respect for self and others; to be able to work with others as a leader and a team player; to have a sense of connectedness with others and country; and to have a sense of mutual obligation. Our graduates should be informed and active participants in moving society towards sustainability.

This graduate capability is supported by:

Learning outcome

- Comment critically on scientific papers with regard to life on our Planet today

Assessment tasks

- Draft commentary
- Final commentary