BIOX122

Biological Basis of Behaviour

S2 OUA 2019

Dept of Biological Sciences

Contents

General Information

Unit convenor and teaching staff
Convener
Larissa Trompf
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Contact via email

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 animal behaviour. Basic mechanisms are covered, together with function and evolution. Scientific literacy about key ideas in the life sciences is an aim of the unit, which is delivered with engaging and colourful lectures and practicals. Such ideas include evolution, sex, genetics, how our brain works, sensing the world and animal communication. The unit culminates with some reflections on the lives of humans in our modern world and the role of culture in human evolution. All enrolment queries should be directed to Open Universities Australia (OUA): see www.open.edu.au

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at https://www.open.edu.au/student-admin-and-support/key-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

Understand and present collected scientific data

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

General Assessment Information

Assignment submission, Turnitin and Plagiarism

This is a paperless unit so no assignments or quizzes will be physically handed in. You will be required to submit all assignments through iLearn via a Turnitin link. Turnitin is an online program that detects plagiarised pieces of work. It compares not only work between students in the current year but also across previous years, across institutions, with all published materials, and the internet. It is an incredibly effective tool. It is a requirement for all assignments in the course that they be written in your own words. Do not under any circumstances lend your work to another student. If that student plagiarises your work you too will be liable. Do not copy and paste text into your document with the thought you will modify it later – you will forget! Lastly do not leave things to the last moment, as that is when the urge to plagiarise hits you most.

The penalties imposed by the University for plagiarism are serious and may include expulsion from the University. ANY evidence of plagiarism WILL be dealt with according to University policy.

Plagiarism involves using the work of another person and presenting it as one's own. A full outline of the Universities policy on plagiarism is found at http://www.mq.edu.au/policy/docs/ academic_honesty/policy.html. The website includes a general discussion of plagiarism, definitions, examples drawn from concrete cases, procedures that will be followed by the University in cases of plagiarism, and recommended penalties. Students are expected to familiarise themselves with the website.

Lateness penalties

- Review questions: no late submissions are accepted; the student forfeits the marks for the chapter
- Quizzes Lab exercises 1 and 2 (part 1): mark will be halved for any late submissions; Last day for submitting quizzes is two weeks after the due date
- Draft commentary: the entire 1% forfeited for any late submission
- Part 2 of Lab exercises 1 and 2, final commentary: 5% of assignment per day or part thereof, including weekends

Assessment Tasks

Name	Weighting	Hurdle	Due
Weekly quizzes	19%	No	Weeks 2-13
Lab exercise 1	4%	No	Sunday 25 August

Name	Weighting	Hurdle	Due
Lab exercise 2	7%	No	Sunday 27 October
Draft commentary	1%	No	Sunday 22 September
Final commentary	24%	No	Sunday 13 October
Invigilated exam	45%	No	Formal examination period

Weekly quizzes

Due: **Weeks 2-13**
Weighting: **19%**

Review questions

These review questions are in the e-textbook. Some review questions in the textbook count for marks, while others are for practice and do not count for marks. Due dates:

Chapter 0 (Welcome) Q1: **Sunday 18 August; it is mandatory to do this give-away question, and failure to do it results in automatic failure**

Chapter 1: Tuesday 13 August

Chapter 2 (and Chapter 0 - see above): Sunday 18 August

Chapter 3: Sunday 8 September

Chapter 4: Sunday 15 September

Chapter 5: Sunday 6 October

Chapter 6: Sunday 13 October

Chapter 7: Sunday 27 October

Chapter 8: Sunday 10 November

The quizzes close sharply at midnight of the due date, and late quizzes are not accepted.

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

Lab exercise 1

Due: **Sunday 25 August**
Weighting: **4%**

Short assignment in two parts, with fuller instructions separately provided in iLearn. Part 1 is a quiz based on the lab exercise, and Part 2 is a document that you upload via turnitin in iLearn.

On successful completion you will be able to:

- Understand and present collected scientific data
- Extract key points from scientific papers and accurately communicate these to a general audience

Lab exercise 2

Due: **Sunday 27 October**
Weighting: **7%**

Short assignment in two parts, with fuller instructions separately provided in iLearn. Part 1 is a quiz based on the lab exercise, and Part 2 is a document that you upload via turnitin in iLearn.

On successful completion you will be able to:

- Understand and present collected scientific data

Draft commentary

Due: **Sunday 22 September**
Weighting: **1%**

Commentary article

The commentary is a short article summarising and commenting on a recent article, a piece meant for a popular audience. Further instructions are provided separately. This writing assignment has a due date for a draft (worth 1%) and the final product. The purpose of the draft is to get you some feedback from the tutors. Both first drafts and final submissions should be uploaded via turnitin onto iLearn. Every submission is electronic in this class.

On successful completion you will be able to:

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

Final commentary

Due: **Sunday 13 October**
Weighting: **24%**

Commentary article

The commentary is a short article summarising and commenting on a recent article, a piece meant for a popular audience. Further instructions are provided separately. This writing assignment has a due date for a draft (worth 1%) and the final product. The purpose of the draft is to get you some feedback from the tutors. Both first drafts and final submissions should be uploaded via turnitin onto iLearn. Every submission is electronic in this class

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

Invigilated exam

Due: **Formal examination period**
Weighting: **45%**

Final exam

The final exam consists of 50 multiple-choice questions, on lectures from Week 1 to Week 12 (Week 13 being a review). You must present yourself for examination at the time and place arranged for the exam.

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

The Greatest Show on the Planet

This subject was previously known as **SCI140 Introduction to Brain, Behaviour and Evolution.**

BIOX122 is a suitable introductory science course 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.

Questions and requests about this course should be directed to the course coordinator: larissa.trompf@mq.edu.au

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.

Textbook

The required textbook is called Biological Basis of Behaviour, written by Ken Cheng, published by Tophat, 2018. It is only available in electronic format, which makes it cheaper. Do not get any older versions of textbooks, as you need the e-textbook for a portion of the assessments.

The relevant chapters for each week are listed in the lecture schedule on pages 4-5.

What is new this year?

Teaching materials have largely been developed by Prof. Ken Cheng, Macquarie University, Dept. of Biological Sciences.

Except for two recorded guest lectures, Ken Cheng is giving all the lectures this year. Hopefully, this will give a unified voice to the lectures. The textbook has been updated, with new chapters written by Ken Cheng on history and on writing. The lecture contents, however, stay similar, with the usual updates from year to year. If anything can be said, more infotainment is being injected into lectures. The formats for assignments have stayed similar, but assignments have been updated in the usual renewal of materials from year to year.

Teaching Staff

Convener

Larissa Trompf Dept. of Biological Sciences larissa.trompf@mq.edu.au

Guest lecturers (recorded lectures)

Ken Cheng Dept. of Biological Sciences ken.cheng@mq.edu.au

Ajay Narendra Dept. of Biological Sciences ajay.narendra@mq.edu.au

Unit Schedule

Week	Lecture	Topic

1	1.1	Overview and introduction
29 July–	1.2 (ch.1)	How science 'works'
	1.3 (ch.1)	Ethics
	1.4R (ch.1)	Good study habits
2	2.1R (ch.2)	Brief history
5 Aug–	2.2 (ch.2)	Tinbergen's explanations
3	3.1 (ch.3)	Darwin and Evolution
12 Aug–	3.2R (ch.3)	Evolution on a small scale
4	4.1R (ch.3)	Evolution on a large scale
19 Aug–	4.2 (ch.3)	Evolution of behaviour
5	5.1R (ch.3)	Genetics and epigenetics
26 Aug–	5.2 (ch.4)	Nervous system 1
6	6.1 (ch.4)	Nervous system 2
2 Sept–	6.2R (ch.5)	Senses
7	7.1 (ch.5)	Perception (a ‘folk musical’)
9 Sept–	7.2R (ch.6)	Learning 1: Basics

Midsemester break 16 September–29 September		
8	8.1 (ch.6)	Learning 2: Cognitive approaches to learning
30 Sept-	8.2R (ch.7)	Animal behaviour 1
9	9.1 (ch.7)	Animal behaviour 2
7 Oct–	9.2R (ch.7)	Communication
10	10.1 (ch.7)	Sexual selection
14 Oct–	10.2R (ch.8)	Human evolution
11	11.1R (ch.8)	Family and sociality
21 Oct–	11.2 (ch.8)	Darwinian psychiatry: depression
12	12.1R (ch.8)	Society, culture, altruism and human evolution
28 Oct–	12.2 (ch.8)	Rise of civilisation and its influence on the Planet
13	13.1	Summary and review
4 Nov–	13.2	Course song!

Policies and Procedures

Late Submission - applies unless otherwise stated

elsewhere in the unit guide

Unless a Special Consideration request has been submitted and approved, (a) a penalty for lateness will apply – two (2) marks out of 100 will be deducted per day for assignments submitted after the due date – and (b) no assignment will be accepted more than seven (7) days (incl. weekends) after the original submission deadline. No late submissions will be accepted for timed assessments – e.g. quizzes, online tests.

Extension Request

Special Consideration Policy and Procedure (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policies/special-consideration)

The University recognises that students may experience events or conditions that adversely affect their academic performance. If you experience serious and unavoidable difficulties at exam time or when assessment tasks are due, you can consider applying for Special Consideration.

You need to show that the circumstances:

1. were serious, unexpected and unavoidable
2. were beyond your control
3. caused substantial disruption to your academic work
4. substantially interfered with your otherwise satisfactory fulfilment of the unit requirements
5. lasted at least three consecutive days or a total of 5 days within the teaching period and prevented completion of an assessment task scheduled for a specific date.

If you feel that your studies have been impacted submit an application as follows:

1. Visit Ask MQ and use your OneID to log in
2. Fill in your relevant details
3. Attach supporting documents by clicking 'Add a reply', click 'Browse' and navigating to the files you want to attach, then click 'Submit Form' to send your notification and supporting documents
4. Please keep copies of your original documents, as they may be requested in the future as part of the assessment process

Outcome

Once your submission is assessed, an appropriate outcome will be organised.

OUA Specific Policies and Procedures

Withdrawal from a unit after the census date

You can withdraw from your subjects prior to the census date (last day to withdraw). If you successfully withdraw before the census date, you won't need to apply for Special Circumstances. If you find yourself unable to withdraw from your subjects before the census date - you might be able to apply for Special Circumstances. If you're eligible, we can refund your fees and overturn your fail grade.

If you're studying Single Subjects using FEE-HELP or paying up front, you can apply online.

If you're studying a degree using HECS-HELP, you'll need to apply directly to Macquarie University.

Macquarie University policies and procedures are accessible from Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- Academic Appeals Policy
- Academic Integrity Policy
- Academic Progression Policy
- Assessment Policy
- Fitness to Practice Procedure
- Grade Appeal Policy
- Complaint Management Procedure for Students and Members of the Public
- Special Consideration Policy *(**Note:** The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.)*

Undergraduate students seeking more policy resources can visit the Student Policy Gateway (https://students.mq.edu.au/support/study/student-policy-gateway). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

If you would like to see all the policies relevant to Learning and Teaching visit Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/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/study/getting-started/student-conduct

Results

Results published on platform other than eStudent, (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in eStudent. For more information visit ask.mq.edu.au or if you are a Global MBA student contact globalmba.support@mq.edu.au

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

If you are a Global MBA student contact globalmba.support@mq.edu.au

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/.

When using the University's IT, you must adhere to the Acceptable Use of IT Resources Policy. The policy applies to all who connect to the MQ network including students.

Graduate Capabilities

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 outcomes

- 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
- Draft commentary
- Final commentary

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
- Understand and present collected scientific data
- 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

- Weekly quizzes
- Lab exercise 1
- Lab exercise 2
- Draft commentary

- Final commentary
- Invigilated 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

- Understand and present collected scientific data
- 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

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

- Understand and present collected scientific data
- 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

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 task

- Final commentary