



# BIOX260

## Science of Sex

S2 OUA 2018

*Dept of Biological Sciences*

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#### **Disclaimer**

Macquarie University has taken all reasonable measures to ensure the information in this publication is accurate and up-to-date. However, the information may change or become out-dated as a result of change in University policies, procedures or rules. The University reserves the right to make changes to any information in this publication without notice. Users of this publication are advised to check the website version of this publication [or the relevant faculty or department] before acting on any information in this publication.

## General Information

Unit convenor and teaching staff

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Prerequisites

Corequisites

Co-badged status

Unit description

This unit is designed to appeal to a broad diversity of students, from those studying science to those in anthropology, arts, communication, education, psychology, sociology, etc. Indeed, we hope it will engage all students with an active interest in being alive! A scientific background is not required for students taking this unit, but we hope to provide students with a scientific approach to understanding sex. This unit takes a broad approach, using examples (some quite bizarre) from the animal and plant worlds. At the same time, it covers in depth the sexual biology and behavioural science of our own intriguing species. All enrolment queries should be directed to Open Universities Australia (OUA): see [www.open.edu.au](http://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:

1. Understand and use correct biological terminology
2. Explain the difference between asexual and sexual reproduction, and have an understanding of why sexual reproduction has evolved
3. Identify the various mating systems for both plants and animals, and the strategies used by males and females from each system
4. Recall specific examples of species from each of the mating systems presented during lectures
5. Outline and understand evolutionary processes, especially in relation to sexual

selection (rather than natural selection)

6. Read and understand scientific papers in the sexual selection literature

7. Create a poster that succinctly summarises information on a sexual selection topic

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#">Science Skills Quiz (Quiz 1)</a>	0%	No	Week 4
<a href="#">Textbook questions</a>	20%	No	every fortnight
<a href="#">Poster assessment</a>	25%	No	Week 10
<a href="#">Peer Review</a>	5%	No	Week 12
<a href="#">Weekly Quizzes</a>	50%	No	Every Week

### Science Skills Quiz (Quiz 1)

Due: **Week 4**

Weighting: **0%**

#### Workshop and Online Quizzes.

**Workshop:** provides information necessary for all assessments in this unit. Everyone should complete this and the quiz to demonstrate your grasp of what is needed for the assessments.

**Quiz:** 10 questions test your general science skills knowledge eg. referencing, plagiarism, basic science communication, library searches. Anyone can complete to test baseline knowledge. Students with no science background are recommended to first read Section One before attempting.

#### THREE ATTEMPTS TO PASS.

On successful completion you will be able to:

- 1. Understand and use correct biological terminology
- 2. Explain the difference between asexual and sexual reproduction, and have an understanding of why sexual reproduction has evolved
- 3. Identify the various mating systems for both plants and animals, and the strategies used by males and females from each system
- 4. Recall specific examples of species from each of the mating systems presented during lectures
- 5. Outline and understand evolutionary processes, especially in relation to sexual selection (rather than natural selection)

- 6. Read and understand scientific papers in the sexual selection literature

## Textbook questions

Due: **every fortnight**

Weighting: **20%**

**Answers to set questions submitted as a blog post.**

**2% each Topic, 4% each submission.**

**Due every fortnight -**

Topic 2-3: end of week 4

Topic 4-5: end of week 6

Topic 6-7: end of week 8

Topic 8-9: end of week 10

Topic 10-11: end of week 12

On successful completion you will be able to:

- 1. Understand and use correct biological terminology
- 2. Explain the difference between asexual and sexual reproduction, and have an understanding of why sexual reproduction has evolved
- 3. Identify the various mating systems for both plants and animals, and the strategies used by males and females from each system
- 4. Recall specific examples of species from each of the mating systems presented during lectures
- 5. Outline and understand evolutionary processes, especially in relation to sexual selection (rather than natural selection)
- 6. Read and understand scientific papers in the sexual selection literature

## Poster assessment

Due: **Week 10**

Weighting: **25%**

Based on a real data set (provided in iLearn), the idea is to take on the role of the researcher and present the research findings as if they are your own.

20% mark comes from convener

5% comes from your peers

On successful completion you will be able to:

- 1. Understand and use correct biological terminology
- 2. Explain the difference between asexual and sexual reproduction, and have an understanding of why sexual reproduction has evolved
- 3. Identify the various mating systems for both plants and animals, and the strategies used by males and females from each system
- 4. Recall specific examples of species from each of the mating systems presented during lectures
- 5. Outline and understand evolutionary processes, especially in relation to sexual selection (rather than natural selection)
- 6. Read and understand scientific papers in the sexual selection literature
- 7. Create a poster that succinctly summarises information on a sexual selection topic

## Peer Review

Due: **Week 12**

Weighting: **5%**

Marking your peer's posters!

You will be randomly allocated five peer posters and will be required to them online in iLearn.

Your ability to mark appropriately (compared to other students and the convener) will be graded.

On successful completion you will be able to:

- 1. Understand and use correct biological terminology
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- 3. Identify the various mating systems for both plants and animals, and the strategies used by males and females from each system
- 4. Recall specific examples of species from each of the mating systems presented during lectures
- 5. Outline and understand evolutionary processes, especially in relation to sexual selection (rather than natural selection)
- 6. Read and understand scientific papers in the sexual selection literature

## Weekly Quizzes

Due: **Every Week**

Weighting: **50%**

10 Quizzes for topics 2-11 (5% each) all are open from the beginning of semester.

**Quizzes are due weekly, with a week's quiz due by the end of the following week i.e. Week**

## 2 Quiz is due before end of Week 3.

Quizzes test your knowledge of the content from the corresponding lectures.

### You have only one attempt at each quiz!

**Quizzes are timed** with ~20 Questions to be completed in 25 min. A variety of question types are included, for example multiple choice, true/false, short answer matching.

On successful completion you will be able to:

- 1. Understand and use correct biological terminology
- 2. Explain the difference between asexual and sexual reproduction, and have an understanding of why sexual reproduction has evolved
- 3. Identify the various mating systems for both plants and animals, and the strategies used by males and females from each system
- 4. Recall specific examples of species from each of the mating systems presented during lectures
- 5. Outline and understand evolutionary processes, especially in relation to sexual selection (rather than natural selection)

## Delivery and Resources

Three lectures per week are delivered in person to on campus students. These lectures - audio with slides - will become available online on iLearn Echo360 ~1hr after recorded. Lecture slides will be posted in advanced.

2018 S2 times

Lecture 1	Thursday 12-1pm
Lecture 2	Thursday 1-2pm
Lecture 3	Friday 12-1pm

### Textbook

This textbook was designed specifically for BIOL260, and you can purchase an ebook of the 4<sup>th</sup> edition from the publisher (\$60) <https://www.mheducation.com.au/9781308874012-aus-cust-e-book-the-science-of-sex-4e>. Much of the lecture material corresponds with chapters in the text, and the associated readings and questions are taken directly from this book. There are also many hardcopies held in the reserve section of the library. Hardcopy were not ordered by Coop Bookshop this year, however the used second, third and fourth hardcopy editions are suitable for this unit, but the first edition is not.

## Unit Schedule

Lectures denoted with \* are prerecorded

Lecture	Session Week	Date 2018	Lecturer	Specific topic
1	1	2-Aug	Lori H	Unit outline
2	1	2-Aug	Lori H	Assessment
3	1	3-Aug	Lori H	Evolution
4	2	9-Aug	Mike G	Why have sex?
5	2	9-Aug	Mike G	Sex determination
6	2	10-Aug	Mike G	Gonad development
7	3	16-Aug	Mike G	Development of human genitalia
8	3	16-Aug	Mike G	Hormones, cycles, puberty, pregnancy
9	3	17-Aug	Mike G	Gametes, fertilisation, contraception
10	4	23-Aug	Mike G	Love, neurobiology and orgasm
11	4	23-Aug	Mike G	Sexually transmitted infections
12	4	24-Aug	Mike G	Human mate choice
13	5	30-Aug	Lori H	Animal reproduction
14	5	30-Aug	Lori H	Animal mating systems
15	5	31-Aug	Lori H	Sexual selection & sex roles
16	6	6-Sept	Lori H	Mate competition
17	6	6-Sept	Lori H	Mate choice
18	6	7-Sept	Malin A	<b>Current views on sex roles*</b>
19	7	13-Sept	Matt B	Sexual signals I
20	7	13-Sept	Matt B	Sexual signals II
21	7	14-Sept	Matt B	Sexual signals III

MID-SEMESTER BREAK				
22	8	4-Oct	Simon G	<b>Multiple mating &amp; Genitalia*</b>
23	8	4-Oct	Simon G	<b>Sperm competition*</b>
24	8	5-Oct	Simon G	<b>Cryptic choice*</b>
25	9	11-Oct	Simon G	<b>Sexual conflict &amp; SAC*</b>
26	9	11-Oct	--	No Lecture
27	9	12-Oct	Kate B	Sexual cannibalism
28	10	18-Oct	Andy B	Sexual diversity I
29	10	18-Oct	Andy B	Sexual diversity II
30	10	19-Oct	Andy B	Sexual diversity III
31	11	25-Oct	Brian A	Plant reproduction I
32	11	25-Oct	Brian A	Plant reproduction II
33	11	26-Oct	Julia C	<b>Sexual deception in orchids*</b>
34	12	1-Nov	TBA	<b>TBA</b> Fun lectures on sex research happening on campus
35	12	2-Nov	TBA	
36	13	8-Nov	TBA	
37	13	9-Nov	TBA	

## 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 \(https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central\)](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 \(https://students.mq.edu.au/support/study/student-policy-gateway\)](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 \(https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central\)](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 shown in *iLearn*, 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](http://ask.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](http://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](http://ask.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/](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

- 4. Recall specific examples of species from each of the mating systems presented during lectures
- 6. Read and understand scientific papers in the sexual selection literature
- 7. Create a poster that succinctly summarises information on a sexual selection topic

## Assessment tasks

- Science Skills Quiz (Quiz 1)
- Textbook questions
- Poster assessment

## Capable of Professional and Personal Judgement and Initiative

We want our graduates to have emotional intelligence and sound interpersonal skills and to demonstrate discernment and common sense in their professional and personal judgement. They will exercise initiative as needed. They will be capable of risk assessment, and be able to handle ambiguity and complexity, enabling them to be adaptable in diverse and changing environments.

This graduate capability is supported by:

### Learning outcomes

- 6. Read and understand scientific papers in the sexual selection literature
- 7. Create a poster that succinctly summarises information on a sexual selection topic

## Assessment tasks

- Textbook questions
- Poster assessment
- Peer Review

## Commitment to Continuous Learning

Our graduates will have enquiring minds and a literate curiosity which will lead them to pursue knowledge for its own sake. They will continue to pursue learning in their careers and as they participate in the world. They will be capable of reflecting on their experiences and relationships with others and the environment, learning from them, and growing - personally, professionally and socially.

This graduate capability is supported by:

### Learning outcomes

- 1. Understand and use correct biological terminology
- 4. Recall specific examples of species from each of the mating systems presented during lectures
- 5. Outline and understand evolutionary processes, especially in relation to sexual selection (rather than natural selection)
- 6. Read and understand scientific papers in the sexual selection literature
- 7. Create a poster that succinctly summarises information on a sexual selection topic

## Assessment tasks

- Textbook questions
- Poster assessment
- Peer Review

## 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

- 1. Understand and use correct biological terminology
- 2. Explain the difference between asexual and sexual reproduction, and have an understanding of why sexual reproduction has evolved
- 3. Identify the various mating systems for both plants and animals, and the strategies used by males and females from each system
- 4. Recall specific examples of species from each of the mating systems presented during lectures
- 5. Outline and understand evolutionary processes, especially in relation to sexual selection (rather than natural selection)
- 6. Read and understand scientific papers in the sexual selection literature
- 7. Create a poster that succinctly summarises information on a sexual selection topic

## Assessment tasks

- Science Skills Quiz (Quiz 1)
- Textbook questions
- Poster assessment
- Peer Review
- Weekly Quizzes

## 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**

- 1. Understand and use correct biological terminology
- 2. Explain the difference between asexual and sexual reproduction, and have an understanding of why sexual reproduction has evolved
- 3. Identify the various mating systems for both plants and animals, and the strategies used by males and females from each system
- 4. Recall specific examples of species from each of the mating systems presented during lectures
- 5. Outline and understand evolutionary processes, especially in relation to sexual selection (rather than natural selection)
- 6. Read and understand scientific papers in the sexual selection literature
- 7. Create a poster that succinctly summarises information on a sexual selection topic

## **Assessment tasks**

- Science Skills Quiz (Quiz 1)
- Textbook questions
- Poster assessment
- Peer Review
- Weekly Quizzes

## **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**

- 2. Explain the difference between asexual and sexual reproduction, and have an understanding of why sexual reproduction has evolved
- 6. Read and understand scientific papers in the sexual selection literature
- 7. Create a poster that succinctly summarises information on a sexual selection topic

## Assessment tasks

- Science Skills Quiz (Quiz 1)
- Textbook questions
- Poster assessment
- Peer Review
- Weekly Quizzes

## 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

- 2. Explain the difference between asexual and sexual reproduction, and have an understanding of why sexual reproduction has evolved
- 4. Recall specific examples of species from each of the mating systems presented during lectures
- 5. Outline and understand evolutionary processes, especially in relation to sexual selection (rather than natural selection)
- 6. Read and understand scientific papers in the sexual selection literature
- 7. Create a poster that succinctly summarises information on a sexual selection topic

## Assessment tasks

- Science Skills Quiz (Quiz 1)
- Textbook questions
- Poster assessment

## 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 outcomes

- 3. Identify the various mating systems for both plants and animals, and the strategies used by males and females from each system
- 7. Create a poster that succinctly summarises information on a sexual selection topic

## Assessment tasks

- Science Skills Quiz (Quiz 1)
- Textbook questions
- Poster assessment

## 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 outcomes

- 3. Identify the various mating systems for both plants and animals, and the strategies used by males and females from each system
- 5. Outline and understand evolutionary processes, especially in relation to sexual selection (rather than natural selection)
- 7. Create a poster that succinctly summarises information on a sexual selection topic

## Assessment tasks

- Textbook questions
- Poster assessment
- Peer Review

## Changes since First Published

Date	Description
25/07/2018	Again clarification to "workshop" and "quizzes", also have tailored and updated information about delivery for the OUA students.
18/07/2018	I have changed when online quizzes are due to better test student learning across the semester. Further, I have made minor updates to lecture schedule to remove a lecture that was added to past years content.



Date	Description
11/ 07/ 2018	The ebook link had changed and needs tone updated.