BIOL260

Science of Sex

S2 External 2018

Dept of Biological Sciences

Contents

General Information	2
Learning Outcomes	2
Assessment Tasks	3
Delivery and Resources	6
Unit Schedule	8
Policies and Procedures	10
Graduate Capabilities	12
Changes from Previous Offering	17
Changes since First Published	17

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

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Credit points 3
Prerequisites (12cp at 100 level or above) or admission to GCertBiotech
Corequisites
Co-badged status
Unit description Topics related to sex pervade our culture, media, politics, relationships and everyday life. Despite this, many of us have never had the opportunity to learn why sex evolved. What are the real differences between males and females? What is the chemistry that makes partners attractive? Why are the sexual strategies and behaviours of different species so diverse? What hormones control our maturation, reproductive cycles and pregnancy? This unit takes a broad approach, using examples (some quite bizarre) from the animal and plant worlds. At the same time, we cover in depth the sexual biology and behaviour of our own intriguing species.

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:

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
Science Skills Quiz (Quiz 1)	0%	No	week 4
Textbook questions	20%	No	fortnightly
Poster assessment	25%	No	week 10
Peer Review	5%	No	week 12
Weekly Quizzes	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:

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- 4. Recall specific examples of species from each of the mating systems presented during lectures
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- 6. Read and understand scientific papers in the sexual selection literature

Textbook questions

Due: **fortnightly**
Weighting: **20%**

Answers to set questions submitted as a blog.

2% each topic

Due every fortnight:

Topics 2-3: end of week 4 (4%)

Topics 4-5: end of week 6 (4%)

Topics 6-7: end of week 8 (4%)

Topics 8-9: end of week 10 (4%)

Topics 10-11: end of week 12 (4%)

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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:

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- 4. Recall specific examples of species from each of the mating systems presented during lectures
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- 6. Read and understand scientific papers in the sexual selection literature

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.

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- 4. Recall specific examples of species from each of the mating systems presented during lectures
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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.

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- 4. Recall specific examples of species from each of the mating systems presented during lectures
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- 7. Create a poster that succinctly summarises information on a sexual selection topic

Delivery and Resources

Three lectures per week, are delivered in person, all available online on iLearn Echo360 ~1hr after recorded.

2018 S2 times and location

Lecture 1	**Thursday 12-1pm**	**29WW Theatre 1**
Lecture 2	**Thursday 1-2pm**	**29WW Theatre 1**
Lecture 3	**Friday 12-1pm**	**14SCO Mason Theatre**

Textbook:

This textbook was designed specifically for BIOL260, and you can purchase an ebook of the

4th edition from the publisher ($60) https://www.mheducation.com.au/9781308874012-aus-cust-ebook-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 copies 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

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	**Current views on sex roles***
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	**Multiple mating & Genitalia***
23	8	4-Oct	Simon G	**Sperm competition***
24	8	5-Oct	Simon G	**Cryptic choice***
25	9	11-Oct	Simon G	**Sexual conflict & SAC***
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	**Sexual deception in orchids***
34	12	1-Nov	TBA	**TBA** **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

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 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.

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://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
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- 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 from Previous Offering

In 2018 S2 there will be no practical tutorials run. Therefore, information presented in those practicals will be put online powerpoint tutorials and Echo 360 recordings. Due to this change poster assignments will be done individually vs. in pairs formed in tutorial groups.

Quizes will be due weekly on information presented form week 2-11. They will be due the week following, i.e week 2 quiz will be due at the end of week 3.

Textbook questions will be due fortnightly on previous 2 weeks information, i.e. week 2 and 3 questions are due at the end of week 4.

Changes since First Published

Date	Description
25/07/2018	I have clarified wording under "workshop and science quiz". I have also provided more detail into "quizzes" section. Further I provided more detail under Delivery and resources to provide information on when the lecture is held and when recordings will be available. (also doing this for the OUA after sending this)
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.
11/07/2018	The link for the ebook has changed and has now been updated.