



BIOL188

Advanced Science (Biology) 1

FY1 Day 2016

Dept of Biological Sciences

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General Information

Unit convenor and teaching staff

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by appointment

Senior Lecturer, director of Advanced Biology Program

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Credit points

3

Prerequisites

Admission to BAdvSc and permission of Executive Dean of Faculty

Corequisites

Co-badged status

Unit description

This unit consists of weekly tutorials examining hot topics in biology with a variety of scientists from a diverse background. Students are expected to actively contribute during the tutorials and produce a presentation on their favourite topic of the year. Opportunities for research internships in biology are provided.

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. Read, interpret and discuss major contributions to biological research published in the peer-reviewed literature.
2. Evaluate how the experimental design and approach of biological studies influences the validity and impact of conclusions.
3. Demonstrate skills in teamwork and collegial discussion
4. Evaluate how effective your communication has been to an audience
5. Write a short review paper on a hot topic in biology for a non-specialist audience

General Assessment Information

Unit completion requirements

Students must complete all the assessment tasks. A Satisfactory (or Participated) grade is required in each assessment task in order to pass this subject.

Student learning in this unit is evaluated using two different systems:

Participation tasks (graded as Participated or Did not participate) indicate your level of engagement with learning opportunities. The weekly discussion groups and the weekly online question assessment track active participation rather than performance level.

Feedback assessment tasks allow evaluations of capability. Two of these assessments (one written and one oral) are used in the unit, and high standards are expected. You will be provided with written feedback regarding your performance in these assessments, and the assessment tasks will be graded as Satisfactory or Unsatisfactory.

Assignment submission

All assessments are to be submitted via iLearn. Your work may be submitted to the anti-plagiarism detection software (Turnitin) via iLearn. Your work will be automatically compared to work of your classmates, previous students from Macquarie and other universities, with material available on the Internet, both freely available and subscription-based electronic journals and book chapters. The results will be sent only to the unit convenor, who will analyse them with reference to the University's Policy on Academic Honesty.

Extensions and penalties

The deadlines for assignments are not negotiable. Late assignments will be penalised. Extensions are granted only on grounds of illness or misadventure, and appropriate supporting documentation must be submitted. **All applications for special consideration or extension must be sought before the due date.**

Work submitted after 3 weeks beyond the due date, or the date for which an extension has been given, will not be accepted. If you are having problems completing an assignment, please contact the Convenor as soon as possible.

Assessment Tasks

Name	Weighting	Hurdle	Due
<u>weekly discussions</u>	40%	No	Weekly, 9 am each Wednesday
<u>written paper on hot topic</u>	20%	No	11 November 2016
<u>group project at Taronga Zoo</u>	40%	No	27 Sept 2016

weekly discussions

Due: **Weekly, 9 am each Wednesday**

Weighting: **40%**

Preparation for and participation in weekly discussions. Each week read the required articles, contribute at the blog some response to the discussion question posed by the week's presenter (max 500 words), be prepared to participate constructively in the discussion.

On successful completion you will be able to:

- 1. Read, interpret and discuss major contributions to biological research published in the peer-reviewed literature.
- 2. Evaluate how the experimental design and approach of biological studies influences the validity and impact of conclusions.
- 3. Demonstrate skills in teamwork and collegial discussion

written paper on hot topic

Due: **11 November 2016**

Weighting: **20%**

A written paper (max 1500 words) in one of two possible formats, for different audiences. You should take one of the "hot topics" discussed during the year, and develop it into both a clear explanation and a forward vision of what might be possible in the future.

On successful completion you will be able to:

- 1. Read, interpret and discuss major contributions to biological research published in the peer-reviewed literature.
- 2. Evaluate how the experimental design and approach of biological studies influences the validity and impact of conclusions.
- 4. Evaluate how effective your communication has been to an audience
- 5. Write a short review paper on a hot topic in biology for a non-specialist audience

group project at Taronga Zoo

Due: **27 Sept 2016**

Weighting: **40%**

A group project coordinated by Michelle Power in collaboration with Taronga to develop an "Amazing Zoo Race" for August Science Week imparting enthusiasm and also science to school students. There will first be a scoping phase to develop ideas, and your contributions to this will be entered at a blog (separate from the blog for week-by-week discussion topics). Then there will be a phase of detailed planning and implementation. Finally you will write a written report reflecting on how the project went -- how effective it was in reaching people and communicating good science -- and what might be done differently another time.

On successful completion you will be able to:

- 1. Read, interpret and discuss major contributions to biological research published in the peer-reviewed literature.
- 3. Demonstrate skills in teamwork and collegial discussion
- 4. Evaluate how effective your communication has been to an audience

Delivery and Resources

This unit is for students enrolled in the Advanced Science (Biology) Program. The Advanced Biology Program offers enrichment for students who are achieving strong grades in their regular units and who have energy and curiosity to spare. Students come into close contact with active researchers, and are challenged to think about topics where biological knowledge is changing and advancing rapidly. Some students may go on to become career researchers, but we are enthusiastic also for Adv Biol students to enter media or politics or government or business.

The unit meets for one hour weekly, jointly with Biol388. Most weeks are discussions about hot topics and recent research advances in Biology with a variety of people as discussion-leaders. Topic areas include medical science, molecular biology, ecology, evolution, palaeontology, and biology in the media, to name a few. New for 2016, students will participate in a group project to develop research-based material for a Science Week exercise at Taronga Zoo. Some weeks, discussion will revolve around this project.

Unit web page

The format of this unit requires that you complete blog entries and download readings from iLearn. Hence, it is important for you to log in on a regular basis.

To access the online unit, go to <https://iLearn.mq.edu.au/login/MQ/> and type in your Macquarie OneID Username and password.

New to iLearn? You can find out more at: http://www.mq.edu.au/iLearn/student_info/

Experiencing difficulties? Visit: <http://informatics.mq.edu.au/help/>

Unit Schedule

The schedule of presenters and topics for each semester will be listed on iLearn progressively as presenters are confirmed.

SESSION 1

week 1 (Wed 2 March) no meeting

week 2 (Wed 9 March)

Introductory meeting; aims of the Advanced Biology Program; organisation of the year; the group project at Taronga Zoo; internships and PACE; iLearn and blogs

week 3 Wed 16 March

Mark Westoby leading discussion

week 4 Wed 23 March

Michelle Power leading: discussion of group project at Taronga Zoo

week 5 Wed 30 March

guest discussion leader

week 6 Wed 6 April

11-25 April recess

week 7 Wed 27 April

week 8 Wed 4 May

week 9 Wed 11 May

meeting to discuss progress in group project -- wind-up of scoping phase, beginning of detailed planning and implementation

week 10 Wed 18 May

week 11 Wed 25 May

week 12 Wed 1 June

week 13 Wed 8 June

SESSION 2

week 1 Wed 3 August

week 2 Wed 10 August

week 3 Wed 17 August (National Science Week 13-21 Aug)

culmination of group project at Taronga Zoo

week 4 Wed 24 August

week 5 Wed 31 August

week 6 Wed 7 Sept

week 7 Wed 14 Sept

session 2 recess 19 Sept - 3 Oct

week 8 Wed 5 Oct

week 9 Wed 12 Oct

week 10 Wed 19 Oct

week 11 Wed 26 Oct

Advanced Biology Conference, running 12-2 pm. Will include presentations from Biol3888 students about their internships, plus reporting and appraisal of group project at Taronga Zoo.

week 12 Wed 2 Nov

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

New Assessment Policy in effect from Session 2 2016 http://mq.edu.au/policy/docs/assessment/policy_2016.html. For more information visit http://students.mq.edu.au/events/2016/07/19/new_assessment_policy_in_place_from_session_2/

Assessment Policy prior to Session 2 2016 <http://mq.edu.au/policy/docs/assessment/policy.html>

Grading Policy prior to Session 2 2016 <http://mq.edu.au/policy/docs/grading/policy.html>

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

Complaint Management Procedure for Students and Members of the Public http://www.mq.edu.au/policy/docs/complaint_management/procedure.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/

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 outcome

- 3. Demonstrate skills in teamwork and collegial discussion

Assessment tasks

- weekly discussions
- written paper on hot topic
- group project at Taronga Zoo

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

- 1. Read, interpret and discuss major contributions to biological research published in the peer-reviewed literature.
- 2. Evaluate how the experimental design and approach of biological studies influences the validity and impact of conclusions.
- 3. Demonstrate skills in teamwork and collegial discussion
- 4. Evaluate how effective your communication has been to an audience
- 5. Write a short review paper on a hot topic in biology for a non-specialist audience

Assessment tasks

- weekly discussions
- written paper on hot topic
- group project at Taronga Zoo

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

- 2. Evaluate how the experimental design and approach of biological studies influences the validity and impact of conclusions.
- 3. Demonstrate skills in teamwork and collegial discussion
- 4. Evaluate how effective your communication has been to an audience
- 5. Write a short review paper on a hot topic in biology for a non-specialist audience

Assessment tasks

- weekly discussions
- written paper on hot topic
- group project at Taronga Zoo

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. Read, interpret and discuss major contributions to biological research published in the peer-reviewed literature.
- 2. Evaluate how the experimental design and approach of biological studies influences

the validity and impact of conclusions.

- 5. Write a short review paper on a hot topic in biology for a non-specialist audience

Assessment tasks

- weekly discussions
- written paper on hot topic
- group project at Taronga Zoo

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. Read, interpret and discuss major contributions to biological research published in the peer-reviewed literature.
- 2. Evaluate how the experimental design and approach of biological studies influences the validity and impact of conclusions.
- 3. Demonstrate skills in teamwork and collegial discussion
- 5. Write a short review paper on a hot topic in biology for a non-specialist audience

Assessment tasks

- weekly discussions
- written paper on hot topic

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. Evaluate how the experimental design and approach of biological studies influences the validity and impact of conclusions.
- 3. Demonstrate skills in teamwork and collegial discussion

- 4. Evaluate how effective your communication has been to an audience

Assessment tasks

- weekly discussions
- written paper on hot topic
- group project at Taronga Zoo

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

- 1. Read, interpret and discuss major contributions to biological research published in the peer-reviewed literature.
- 2. Evaluate how the experimental design and approach of biological studies influences the validity and impact of conclusions.
- 3. Demonstrate skills in teamwork and collegial discussion
- 4. Evaluate how effective your communication has been to an audience
- 5. Write a short review paper on a hot topic in biology for a non-specialist audience

Assessment tasks

- weekly discussions
- written paper on hot topic
- group project at Taronga Zoo

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. Demonstrate skills in teamwork and collegial discussion

- 4. Evaluate how effective your communication has been to an audience

Assessment tasks

- weekly discussions
- group project at Taronga Zoo

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. Demonstrate skills in teamwork and collegial discussion
- 4. Evaluate how effective your communication has been to an audience

Assessment tasks

- weekly discussions
- group project at Taronga Zoo

Changes from Previous Offering

- a group project (but with scope for individual contributions) to communicate biology to school students via a Science Week activity at Taronga Zoo. This replaces the previously compulsory internship in a research lab. However, research internships can still be arranged for Adv Biol students outside the framework of Biol188.