



BIOL860

Biology Research Experience

S2 Day 2017

Dept of Biological Sciences

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General Information

Unit convenor and teaching staff

Rachael Dudaniec

rachael.dudaniec@mq.edu.au

Robert Harcourt

robert.harcourt@mq.edu.au

Anthony Chariton

anthony.chariton@mq.edu.au

Adam Stow

adam.stow@mq.edu.au

Katherine McClellan

katherine.mcclellan@mq.edu.au

Credit points

4

Prerequisites

(8cp from BIOL861 or BIOL873 or BIOL874 or BIOL875 or BIOL877 or BIOL887) and permission by special approval

Corequisites

Co-badged status

Unit description

This unit enables the student to acquire biological research experience by undertaking a small independent research project under academic supervision. The research topic may be flexible, but in most cases it will be aligned with the objectives of an academic staff member involved in research. This unit can be combined with BIOL870 Conservation in Practice for a more extended experience. Students are strongly encouraged to organise their project and supervisor well before commencing this unit.

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. Develop a testable biological hypothesis by reviewing and synthesizing previous research in the scientific literature.
2. Plan and implement a research project to address this hypothesis using principles of experimental design and appropriate data collection methods for measuring and assessing biological processes.
3. Demonstrate effective time and project management skills by working independently to collect scientific data and by documenting these efforts using a project notebook
4. Communicate research findings to a scientific audience in written form by constructing a coherent, well structured document.

General Assessment Information

You will be provided with marking schemes for each assessment task.

All requests for extensions must go via ask.mq as per Disruption policy:

http://students.mq.edu.au/student_admin/manage_your_study_program/disruption_to_studies/

Assessment Tasks

Name	Weighting	Hurdle	Due
<u>Project proposal</u>	20%	No	10 August 2017
<u>Introduction and Methods</u>	30%	No	18 September 2017
<u>Scientific Report</u>	30%	No	20 November 2017
<u>Supervisor Report</u>	20%	No	24 November 2017

Project proposal

Due: **10 August 2017**

Weighting: **20%**

Write a short proposal explaining the work that you will undertake

On successful completion you will be able to:

- 1. Develop a testable biological hypothesis by reviewing and synthesizing previous research in the scientific literature.
- 2. Plan and implement a research project to address this hypothesis using principles of experimental design and appropriate data collection methods for measuring and assessing biological processes.
- 3. Demonstrate effective time and project management skills by working independently

to collect scientific data and by documenting these efforts using a project notebook

Introduction and Methods

Due: **18 September 2017**

Weighting: **30%**

Write the Introduction to the final report describing what is currently known in the area of your project and how your work will contribute to further understanding in this area, and outline the Methods used (this forms part of the major report)

On successful completion you will be able to:

- 1. Develop a testable biological hypothesis by reviewing and synthesizing previous research in the scientific literature.
- 2. Plan and implement a research project to address this hypothesis using principles of experimental design and appropriate data collection methods for measuring and assessing biological processes.
- 3. Demonstrate effective time and project management skills by working independently to collect scientific data and by documenting these efforts using a project notebook
- 4. Communicate research findings to a scientific audience in written form by constructing a coherent, well structured document.

Scientific Report

Due: **20 November 2017**

Weighting: **30%**

Complete the Full Scientific Report in the form of a Scientific Paper

On successful completion you will be able to:

- 1. Develop a testable biological hypothesis by reviewing and synthesizing previous research in the scientific literature.
- 2. Plan and implement a research project to address this hypothesis using principles of experimental design and appropriate data collection methods for measuring and assessing biological processes.
- 3. Demonstrate effective time and project management skills by working independently to collect scientific data and by documenting these efforts using a project notebook
- 4. Communicate research findings to a scientific audience in written form by constructing a coherent, well structured document.

Supervisor Report

Due: **24 November 2017**

Weighting: **20%**

Supervisors will provide a report on student performance, progress, abilities acquired and attendance throughout placement.

On successful completion you will be able to:

- 4. Communicate research findings to a scientific audience in written form by constructing a coherent, well structured document.

Delivery and Resources

Technology Used and Required

Students are required to have access to a computer and the internet to access the teaching website and unit materials. Students will also be required to have access to a word processor, spreadsheet manager and database programs to be able to complete set assessment tasks.

For field work students will require access to some field equipment, a complete list of which will be supplied within the teaching website on activation.

Unit Web Page

To access the unit and associated resources, please login to iLearn (<http://ilearn.mq.edu.au/>)
Guides for assist students with on-line websites and resources can be found at

Student iLearn guides: https://www.mq.edu.au/iLearn/student_info/guides.htm

Student Echo guides: https://www.mq.edu.au/iLearn/student_info/lecture_recordings.htm

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_2016.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 (in effect until Dec 4th, 2017): http://www.mq.edu.au/policy/docs/disruption_studies/policy.html

Special Consideration Policy (in effect from Dec 4th, 2017): <https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policies/special-consideration>

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

PG - Capable of Professional and Personal Judgment and Initiative

Our postgraduates will demonstrate a high standard of discernment and common sense in their professional and personal judgment. They will have the ability to make informed choices and decisions that reflect both the nature of their professional work and their personal perspectives.

This graduate capability is supported by:

Learning outcomes

- 3. Demonstrate effective time and project management skills by working independently to collect scientific data and by documenting these efforts using a project notebook
- 4. Communicate research findings to a scientific audience in written form by constructing a coherent, well structured document.

Assessment tasks

- Project proposal
- Introduction and Methods
- Scientific Report
- Supervisor Report

PG - Discipline Knowledge and Skills

Our postgraduates will be able to demonstrate a significantly enhanced depth and breadth of knowledge, scholarly understanding, and specific subject content knowledge in their chosen fields.

This graduate capability is supported by:

Learning outcomes

- 1. Develop a testable biological hypothesis by reviewing and synthesizing previous research in the scientific literature.
- 2. Plan and implement a research project to address this hypothesis using principles of experimental design and appropriate data collection methods for measuring and assessing biological processes.
- 3. Demonstrate effective time and project management skills by working independently to collect scientific data and by documenting these efforts using a project notebook

Assessment tasks

- Project proposal
- Introduction and Methods

- Scientific Report

PG - Critical, Analytical and Integrative Thinking

Our postgraduates will be capable of utilising and reflecting on prior knowledge and experience, of applying higher level critical thinking skills, and of integrating and synthesising learning and knowledge from a range of sources and environments. A characteristic of this form of thinking is the generation of new, professionally oriented knowledge through personal or group-based critique of practice and theory.

This graduate capability is supported by:

Learning outcomes

- 1. Develop a testable biological hypothesis by reviewing and synthesizing previous research in the scientific literature.
- 2. Plan and implement a research project to address this hypothesis using principles of experimental design and appropriate data collection methods for measuring and assessing biological processes.
- 3. Demonstrate effective time and project management skills by working independently to collect scientific data and by documenting these efforts using a project notebook

Assessment tasks

- Project proposal
- Introduction and Methods
- Scientific Report

PG - Research and Problem Solving Capability

Our postgraduates will be capable of systematic enquiry; able to use research skills to create new knowledge that can be applied to real world issues, or contribute to a field of study or practice to enhance society. They will be capable of creative questioning, problem finding and problem solving.

This graduate capability is supported by:

Learning outcomes

- 1. Develop a testable biological hypothesis by reviewing and synthesizing previous research in the scientific literature.
- 2. Plan and implement a research project to address this hypothesis using principles of experimental design and appropriate data collection methods for measuring and assessing biological processes.
- 3. Demonstrate effective time and project management skills by working independently to collect scientific data and by documenting these efforts using a project notebook

Assessment tasks

- Project proposal
- Introduction and Methods
- Scientific Report

PG - Effective Communication

Our postgraduates will be able to communicate effectively and convey their views to different social, cultural, and professional audiences. They will be able to use a variety of technologically supported media to communicate with empathy using a range of written, spoken or visual formats.

This graduate capability is supported by:

Learning outcomes

- 2. Plan and implement a research project to address this hypothesis using principles of experimental design and appropriate data collection methods for measuring and assessing biological processes.
- 4. Communicate research findings to a scientific audience in written form by constructing a coherent, well structured document.

Assessment tasks

- Project proposal
- Introduction and Methods
- Scientific Report
- Supervisor Report

PG - Engaged and Responsible, Active and Ethical Citizens

Our postgraduates will be ethically aware and capable of confident transformative action in relation to their professional responsibilities and the wider community. They will have a sense of connectedness with others and country and have a sense of mutual obligation. They will be able to appreciate the impact of their professional roles for social justice and inclusion related to national and global issues

This graduate capability is supported by:

Learning outcomes

- 1. Develop a testable biological hypothesis by reviewing and synthesizing previous research in the scientific literature.
- 3. Demonstrate effective time and project management skills by working independently to collect scientific data and by documenting these efforts using a project notebook

Assessment tasks

- Project proposal
- Introduction and Methods
- Scientific Report
- Supervisor Report