



# BIOL860

## Biology Research Experience

S2 Day 2014

*Dept of Biological Sciences*

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## General Information

Unit convenor and teaching staff

Other Staff

Katherine McClellan

[katherine.mcclellan@mq.edu.au](mailto:katherine.mcclellan@mq.edu.au)

Contact via [katherine.mcclellan@mq.edu.au](mailto:katherine.mcclellan@mq.edu.au)

Unit Convenor

Michelle Power

[michelle.power@mq.edu.au](mailto:michelle.power@mq.edu.au)

Contact via [michelle.power@mq.edu.au](mailto:michelle.power@mq.edu.au)

Credit points

4

Prerequisites

(Admission to MSc in Biodiversity Conservation or PGDipSc in Biodiversity Conservation or MMarScMgt or MEnv) and 8cp at 800 or 900 level

Corequisites

Co-badged status

Unit description

This unit enables the student to acquire biological research experience by undertaking an internship in a research laboratory or performing a small independent research project under academic supervision. If undertaking a research project the topic may be flexible, but in most cases it will be aligned with the objectives of an academic staff member involved in research.

## 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:

- Evaluate primary scientific literature and formulate research questions
- Have knowledge of experimental design and data interpretation
- Manage for research outcomes within a given timeframe
- Write in a style suitable for publishing scientific data
- Prepare and deliver an oral presentation of research findings

## Assessment Tasks

Name	Weighting	Due
<a href="#"><u>Research Proposal</u></a>	10%	22 August
<a href="#"><u>Scientific Report</u></a>	50%	11 September / 13 November
<a href="#"><u>Oral Presentation</u></a>	15%	21 / 22 October
<a href="#"><u>Supervisors Report</u></a>	25%	tba

### Research Proposal

Due: **22 August**

Weighting: **10%**

**You will write a short proposal explaining the work that you will undertake in your placement (project or internship)**

On successful completion you will be able to:

- Evaluate primary scientific literature and formulate research questions
- Have knowledge of experimental design and data interpretation
- Manage for research outcomes within a given timeframe

### Scientific Report

Due: **11 September / 13 November**

Weighting: **50%**

#### PROJECT PLACEMENT

##### **PART A Introduction Due 11<sup>th</sup> April 2014**

This assessment comprises submission of two parts: 1) a literature review / introduction; 2) the final scientific report. A literature review is a body of work that describes research undertaken in a specific area. In this instance, the research review will describe what is known in the area of your specific project. You will need to read a minimum of 20 peer reviewed manuscripts that provide the background to your project. You then use the information from the literature to position your project within the context of published research findings. The literature review forms the beginnings (Introduction and aims) of your final report. The Introduction / literature review section should be 1500 - 2000 words. In the first instance there are no marks awarded for part A of the assessment but you will be given feedback on your submission and an indication grade (F, P, CR, D, HD). You will receive feedback that will allow you to modify this section and changes and your use of the feedback will be taken into account when marking the final report.

##### **PART B Final Scientific Report Due 6<sup>th</sup> June 2014**

Assessment will be based on a report to be written in the form of a scientific paper (max 5000 words excluding references) in the form of a specified scientific journal to be established with your supervisor. You will need to state the Journal that the report has been prepared for and provide a copy of the journal instructions with your submitted report.

## **INTERNSHIP PLACEMENT**

### **PART A Literature review outline and annotated bibliography Due 11<sup>th</sup> April 2014**

In part A you need prepare an outline of your literature review. You will have discussed your ideas and formulated a topic with your supervisor at the start of the unit and in preparing assessment 1. Here you refine that topic and break it down into a general plan of your review and main points (sub-headings) that will form the review. You also need to provide a list of 5 references with each accompanied by 5-10 dotpoints of the information that the reference will provide for your review. You will not receive a mark for this section however you will be provided with detailed feedback on your review plan

### **PART B Literature review Due 6<sup>th</sup> June 2014**

In Part B the final report is submitted. The final document of ~ 3000 words should draw on material from 10-20 references. The literature review should be prepared in the format for a specified journal agreed between you and your supervisor. Refer to the marking scheme when preparing your review.

### **PART C Method protocols Due 6<sup>th</sup> June 2014**

You also need to provide TWO procedural outlines of methods that you have been performing in your placement. These should be presented in a step by step form that another scientist could easily follow (see iLearn for an example). The procedure should have a brief introductory paragraph that states the general principles of the procedure and what research questions it is used for.

On successful completion you will be able to:

- Evaluate primary scientific literature and formulate research questions
- Have knowledge of experimental design and data interpretation
- Manage for research outcomes within a given timeframe
- Write in a style suitable for publishing scientific data

## **Oral Presentation**

Due: **21 / 22 October**

Weighting: **15%**

**Due Week Beginning May 11 (date to be determined)**

You will deliver a 15-minute presentation of your research topic structured as an academic conference presentation, followed by a 5-minute period for questions to your placement group. Your oral presentation should be accompanied by slides prepared in Powerpoint. This presentation should also be seen as an opportunity to gain constructive comment and feedback from your group towards your final report. In preparing your talk, consult the marking rubric (attached) to understand what examiners looking for in your talk. Use the following checklist (and the marking scheme on iLearn) when developing your presentation

On successful completion you will be able to:

- Manage for research outcomes within a given timeframe
- Prepare and deliver and oral presentation of research findings

## Supervisors Report

Due: **tba**

Weighting: **25%**

**Your supervisors will provide a report to the unit convenors. Supervisors will be evaluating your attendance; understanding of the research; attention to detail; ability to learn new techniques and efficiency in methods performance; participation and enthusiasm; and interactions with team members;**

On successful completion you will be able to:

- Have knowledge of experimental design and data interpretation
- Manage for research outcomes within a given timeframe

## Delivery and Resources

### GENERAL INFORMATION

**Unit Convenor:** Dr Michelle Power

**Building E8A room 324**

**[Michelle.power@mq.edu.au](mailto:Michelle.power@mq.edu.au)**

**Ph: 9850 6974**

**Unit description** This unit enables the student to acquire biological research experience by undertaking an internship in a research laboratory or performing a small independent research project under academic supervision. If undertaking a research project, the topic may be flexible, but in most cases, it will be aligned with the objectives of an academic staff member involved in research. Enrolling students must contact the unit convenor at or before the beginning of the semester to help identify a research topic and academic supervisor.

**Unit Objective** The objective of this unit is to provide experience in biological research relative to the fields of biodiversity, conservation, marine management, marine science and wildlife biology.

**Teaching and learning strategy** Projects will be developed under the supervision of a nominated academic. The assessments in this unit are designed to provide you with skills that are applicable across broad based disciplines, and enable you to gain knowledge on relative to your project area. The research component will provide skills specific to the area of your project.

**Learning outcomes** By the end of this unit you should have acquired a working knowledge of research in the biological sciences. This training will help you identify your area of research interest, begin to develop laboratory skills and improve your abilities in several areas of scientific communication.

**Workload Expectations** BIOL860 is a four credit point unit and requires a workload commitment of 150 hours. We expect that this time will be divided into 1) 118 hours of laboratory experience and 2) 30 hours for assessments. This we expect that you will be in the lab for 8-10 hours a week over the semester. A two hour face to face session is held for presentations – all students must attend and listen to other seminars.

## Unit Schedule

**Unit description** This unit enables the student to acquire biological research experience by undertaking an internship in a research laboratory or performing a small independent research project under academic supervision. If undertaking a research project, the topic may be flexible, but in most cases, it will be aligned with the objectives of an academic staff member involved in research. Enrolling students must contact the unit convenor at or before the beginning of the semester to help identify a research topic and academic supervisor.

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## 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](http://mq.edu.au/policy/docs/academic_honesty/policy.html)

Assessment Policy <http://mq.edu.au/policy/docs/assessment/policy.html>

Grading Policy <http://mq.edu.au/policy/docs/grading/policy.html>

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

Grievance Management Policy [http://mq.edu.au/policy/docs/grievance\\_management/policy.html](http://mq.edu.au/policy/docs/grievance_management/policy.html)

Disruption to Studies Policy [http://www.mq.edu.au/policy/docs/disruption\\_studies/policy.html](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/](https://students.mq.edu.au/support/student_conduct/)

## 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://informatics.mq.edu.au/help/>.

When using the University's IT, you must adhere to the [Acceptable Use Policy](#). The policy applies to all who connect to the MQ network including students.

## Graduate Capabilities

### 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

- Evaluate primary scientific literature and formulate research questions
- Have knowledge of experimental design and data interpretation
- Write in a style suitable for publishing scientific data
- Prepare and deliver an oral presentation of research findings

#### Assessment tasks

- Research Proposal
- Scientific Report
- Oral Presentation
- Supervisors 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 outcome

- Evaluate primary scientific literature and formulate research questions

#### Assessment tasks

- Research Proposal
- 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**

- Evaluate primary scientific literature and formulate research questions
- Have knowledge of experimental design and data interpretation

## **Assessment tasks**

- Research Proposal
- Scientific Report
- Supervisors 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:

## **Assessment tasks**

- Scientific Report
- Oral Presentation

## **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**

- Manage for research outcomes within a given timeframe
- Write in a style suitable for publishing scientific data
- Prepare and deliver an oral presentation of research findings

## **Assessment task**

- Supervisors Report

## Changes since First Published

Date	Description
16/01/2014	The Prerequisites was updated.