



BIOL326

Biology Special Interest Project

S3 Day 2015

Dept of Biological Sciences

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General Information

Unit convenor and teaching staff

Koa Webster

koa.webster@mq.edu.au

E8A 343 (access via 342)

By appointment

Katherine McClellan

katherine.mcclellan@mq.edu.au

Credit points

3

Prerequisites

39cp and permission of Executive Dean of Faculty

Corequisites

Co-badged status

Unit description

In this unit, students undertake an independent research project under the supervision of one of Macquarie University's marine research staff. The scope of past projects has been broad, with students undertaking a range of data collection methods (such as laboratory experiments, fieldwork, and data synthesis) and producing a range of different research products (such as scientific reports, field guides, and review articles). Although there are no formal classes, students are expected to commit at least 135 hours to their project during the semester, culminating with the submission of a scientific report.

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:

Read and evaluate contributions to biological research published in the peer-reviewed literature.

Understand workplace health and safety issues relating to biological research, and be able to assess risks under appropriate supervision.

Formulate an original research question and develop a suitable experimental design.

Competently use appropriate laboratory and/or field-based techniques to investigate a research question.

Communicate a research question and experimental approach in a short research seminar.

Analyse and interpret biological data.

Manage original research within a given timeframe.

Effectively communicate the research question, methods, results and implications of a short-term biological study, in a format suitable for scientific publication.

Assessment Tasks

Name	Weighting	Due
<u>Risk Assessment</u>	10%	By arrangement with supervisor
<u>Research skills checklist</u>	10%	By arrangement with supervisor
<u>Research Proposal Seminar</u>	15%	Week of 4th-8th Jan, 2016
<u>Draft Abstract & Introduction</u>	10%	8th Jan, 2016
<u>Scientific Report</u>	25%	29th Jan, 2016
<u>Supervisor's Report</u>	30%	1st Feb, 2016

Risk Assessment

Due: **By arrangement with supervisor**

Weighting: **10%**

Chemical safety induction and completion of a chemical safety risk assessment for at least one chemical used in the host laboratory. For research that does not involve use of chemicals, completion of a suitable alternative assessment (also safety-based), by arrangement with the Convenor and supervisor.

On successful completion you will be able to:

- Understand workplace health and safety issues relating to biological research, and be able to assess risks under appropriate supervision.

Research skills checklist

Due: **By arrangement with supervisor**

Weighting: **10%**

Demonstration of competence in a 5-item laboratory/field skills checklist.

On successful completion you will be able to:

- Competently use appropriate laboratory and/or field-based techniques to investigate a research question.

Research Proposal Seminar

Due: **Week of 4th-8th Jan, 2016**

Weighting: **15%**

A 10-minute seminar outlining the background to the project and the proposed experimental work.

On successful completion you will be able to:

- Read and evaluate contributions to biological research published in the peer-reviewed literature.
- Formulate an original research question and develop a suitable experimental design.
- Competently use appropriate laboratory and/or field-based techniques to investigate a research question.
- Communicate a research question and experimental approach in a short research seminar.
- Analyse and interpret biological data.

Draft Abstract & Introduction

Due: **8th Jan, 2016**

Weighting: **10%**

Submit a draft of the Abstract and Introduction sections of your scientific paper (final report).

On successful completion you will be able to:

- Read and evaluate contributions to biological research published in the peer-reviewed literature.
- Formulate an original research question and develop a suitable experimental design.
- Competently use appropriate laboratory and/or field-based techniques to investigate a research question.
- Analyse and interpret biological data.

Scientific Report

Due: **29th Jan, 2016**

Weighting: **25%**

Submission of a scientific paper based on the findings of the research project.

On successful completion you will be able to:

- Read and evaluate contributions to biological research published in the peer-reviewed literature.
- Formulate an original research question and develop a suitable experimental design.
- Competently use appropriate laboratory and/or field-based techniques to investigate a research question.
- Analyse and interpret biological data.
- Manage original research within a given timeframe.
- Effectively communicate the research question, methods, results and implications of a short-term biological study, in a format suitable for scientific publication.

Supervisor's Report

Due: **1st Feb, 2016**

Weighting: **30%**

Each supervisor will prepare a report evaluating the competency of the student during the research project.

On successful completion you will be able to:

- Competently use appropriate laboratory and/or field-based techniques to investigate a research question.
- Manage original research within a given timeframe.

Delivery and Resources

Delivery of the unit

Apart from introductory and final classes/information sessions with the Unit Convenor, there are no formal classes for this unit. Students are to arrange their laboratory or fieldwork hours with their nominated academic supervisor.

Teaching and learning strategy

Projects will be developed under the supervision of a nominated academic supervisor. The assessments in this unit are designed to provide you with skills that are applicable across broad scientific disciplines. The focus in the early part of semester will be on workplace safety, experimental skills and developing a research proposal. All of these are skills required for independent research. Throughout the semester you will also be expected to develop skills and gain knowledge specific to your project area.

Required readings

There are no centrally allocated required readings for this unit. However, your supervisor will recommend journal articles pertinent to your research project. It is expected that you will read

widely within your chosen research area, both for your own interest and in order to prepare your scientific paper.

Unit web page

Information and updates regarding the unit will be placed on the unit iLearn page. Please 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 communications

Announcements: General announcements from the Convenor or other teaching staff will be communicated using iLearn.

Discussion board: In order to discuss issues of relevance to all students with the teaching staff, please use the Discussion Board feature of iLearn. The chances are that if you are confused about something in the unit, so are your peers, so it will be useful to share your questions with all.

Email: For matters of a more personal nature, and that do not concern other students (i.e. requests for extensions etc), you should contact the Unit Convener, Koa Webster, by email. Contact details are provided at the start of this document.

Unit Schedule

- *Introduction to BIOL326:* For both students and supervisors, in Week 1. This will be held on **Tuesday 8th December at 1 pm in E8C room 212.**
- *Chemical Safety Induction:* These are held on Friday mornings (11-12:30). Please contact Jenny Minard (jenny.minard@mq.edu.au) to arrange a date to attend an induction. This should preferably be completed before the session recess (recess dates: 21st December to 3rd January).
- *Laboratory/field hours:* By arrangement with supervisor.
- *Research Proposal seminar:* Early in the first week after the recess (4th–8th January). Date and time by arrangement with Convenor and supervisor.
- *Closing tutorial/feedback session:* For students (supervisors also welcome). On **Monday 1st February**; check iLearn for time and venue.

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.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

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://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

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

- Formulate an original research question and develop a suitable experimental design.
- Communicate a research question and experimental approach in a short research seminar.
- Effectively communicate the research question, methods, results and implications of a short-term biological study, in a format suitable for scientific publication.

Assessment tasks

- Research Proposal Seminar
- Draft Abstract & Introduction
- Scientific Report

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

- Understand workplace health and safety issues relating to biological research, and be able to assess risks under appropriate supervision.
- Formulate an original research question and develop a suitable experimental design.
- Competently use appropriate laboratory and/or field-based techniques to investigate a

research question.

- Analyse and interpret biological data.
- Manage original research within a given timeframe.

Assessment tasks

- Risk Assessment
- Research skills checklist
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- Supervisor's Report

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

- Read and evaluate contributions to biological research published in the peer-reviewed literature.
- Understand workplace health and safety issues relating to biological research, and be able to assess risks under appropriate supervision.
- Formulate an original research question and develop a suitable experimental design.
- Competently use appropriate laboratory and/or field-based techniques to investigate a research question.
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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

- Read and evaluate contributions to biological research published in the peer-reviewed literature.
- Understand workplace health and safety issues relating to biological research, and be able to assess risks under appropriate supervision.
- Formulate an original research question and develop a suitable experimental design.
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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

- Read and evaluate contributions to biological research published in the peer-reviewed literature.
- Understand workplace health and safety issues relating to biological research, and be able to assess risks under appropriate supervision.
- Formulate an original research question and develop a suitable experimental design.
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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

- Read and evaluate contributions to biological research published in the peer-reviewed literature.
- Understand workplace health and safety issues relating to biological research, and be able to assess risks under appropriate supervision.
- Communicate a research question and experimental approach in a short research seminar.
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