BIOL860

Biology Research Experience

S1 Day 2014

Dept of Biological Sciences

Contents

General Information

Unit convenor and teaching staff
Other Staff
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Unit Convenor
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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 and oral presentation of research findings

Assessment Tasks

Name	Weighting	Due
Research Proposal	10%	March 22
Scientific Report	50%	April 11, June 6
Oral Presentation	15%	TBA
Supervisors Report	25%	tba

Research Proposal

Due: **March 22**
Weighting: **10%**

PROJECT PLACEMENT

The research proposal describes the project you plan to undertake, the methods you will use and with whom the study will be performed. It must include a timetable of tasks that will be undertaken throughout the project. This is an important aspect as it will assist you with time management throughout your independent study. The requirements for acceptable research proposal are:

- The research project must entail a minimum of 120 hours of work.
- The proposed research and accompanying assessments must be able to be completed by the end of semester in which the unit is commenced.
- The research proposal must be approved and signed by the nominated academic staff member and approved by unit convenor.
- There is no word limit on the proposal but it should be no more than two pages and should include a timeline
- Dot points should be used where possible
- Use the following list when developing your proposal

INTERNSHIP

In this first assessment you will need to outline the specific objectives of your internship in a research laboratory. This will include a brief overview of the main theme of research in your placement laboratory, an outline and brief explanation of the experimental procedures you will learn and apply, and the aim of the project that you will be assisting with. You will also start to formulate the topic of your literature and the main theme should be provided here. You should

discuss your ideas with the laboratory supervisor and develop a topic and provide an overview (100-200 words) of the literature review.

On successful completion you will be able to:

- Evaluate primary scientific literature and formulate research questions
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- Manage for research outcomes within a given timeframe

Scientific Report

Due: **April 11, June 6**
Weighting: **50%**

PROJECT PLACEMENT

PART A Introduction Due 11th 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 6th 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 11th 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 6th 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 6th 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:

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- Write in a style suitable for publishing scientific data

Oral Presentation

Due: **TBA**
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

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.

Titles of previous projects include: Distribution of Antarctic seabirds, Tour boat interactions with bottlenose dolphins, Contraception of koalas, Survivorship of rehabilitated possums, The effectiveness of tunnels and culverts for conservation of wildlife, Distribution of Sea Eagles in Jervis Bay, Distribution of Bottlenose Dolphins in Jervis Bay, Survivorship of hand-reared ringtailed possums, Echidna reproduction.

Enrolling students must contact the unit convenor at or before the beginning of the semester to help identify a research topic and academic supervisor.

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.

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/

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

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 and 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 and oral presentation of research findings

Assessment task

- Supervisors Report

Changes since First Published

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