BIOL860
Biology Research Experience
S1 External 2019
Dept of Biological Sciences

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General Information

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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
BIOL860 int and ext to be co-badged

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://students.mq.edu.au/important-dates

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.

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.

Assessment details

Details of assessments will be provided on iLearn and in class.

All assessments must be correctly cited and referenced using the same format at the journal. See here for details https://esajournals.onlinelibrary.wiley.com/journal/19399170/

Assignment submission

All assignments will be digitally submitted through the appropriate Turnitin submission link on iLearn. No hardcopy / paper submissions are needed. All assessments need to be written in the students own words.

Academic honesty

All assessments need to be written in the students own words. The penalties imposed by the University for plagiarism are serious and may include expulsion from the University. ANY evidence of plagiarism WILL be dealt with following University policy. Penalties for plagiarism range from a loss of marks to awarding of a zero depending on the level of plagiarism and reporting to Faculty disciplinary committee.

Extensions, penalties and Disruptions to Studies

The deadlines for assignments are not negotiable. If an assignment is submitted late a penalty of -10% of the mark allocated for the assignment will be deducted per day that any work is submitted late (i.e. 5 days late = -50% of marks available).

If you experience a serious and unavoidable disruption to your studies and require an extension for an assessment please submit a Disruptions to Studies notification via ask.mq.edu.au with supporting documentation, and a Professional Authority Form completed by your health care professional. If you anticipate a potentially serious and unavoidable disruption (e.g. upcoming surgery) speak to the unit convenor early and apply for an extension before the due date.
Assessment Tasks

<table>
<thead>
<tr>
<th>Name</th>
<th>Weighting</th>
<th>Hurdle</th>
<th>Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project proposal</td>
<td>20%</td>
<td>No</td>
<td>22 March 2018</td>
</tr>
<tr>
<td>Introduction and Methods</td>
<td>30%</td>
<td>No</td>
<td>4 May 2018</td>
</tr>
<tr>
<td>Scientific Report</td>
<td>30%</td>
<td>No</td>
<td>18 June 2018</td>
</tr>
<tr>
<td>Supervisor Report</td>
<td>20%</td>
<td>No</td>
<td>15 June 2018</td>
</tr>
</tbody>
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Project proposal

Due: 22 March 2018
Weighting: 20%

Write a short proposal explaining the work that you will undertake

This Assessment Task relates to the following 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

Introduction and Methods

Due: 4 May 2018
Weighting: 30%

Unit completion

To pass this unit, students need to achieve an overall minimum grade of 50%.

Assessment submission

Submissions of all assessments for this unit will be electronic.

Please note the extensions are not available directly via the convenor, all request must be made via AskMq as detailed above.
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)

This Assessment Task relates to the following 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
• 4. Communicate research findings to a scientific audience in written form by constructing a coherent, well structured document.

Scientific Report
Due: 18 June 2018
Weighting: 30%
Complete the Full Scientific Report in the form of a Scientific Paper

This Assessment Task relates to the following 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
• 4. Communicate research findings to a scientific audience in written form by constructing a coherent, well structured document.

Supervisor Report
Due: 15 June 2018
Weighting: 20%
Supervisors will provide a report on student performance, progress, abilities acquired and attendance throughout placement.
This Assessment Task relates to the following Learning Outcomes:

- 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 (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- Academic Appeals Policy
- Academic Integrity Policy
- Academic Progression Policy
- Assessment Policy
- Fitness to Practice Procedure
- Grade Appeal Policy
- Complaint Management Procedure for Students and Members of the Public
- Special Consideration Policy (Note: The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.)

Undergraduate students seeking more policy resources can visit the Student Policy Gateway (https://students.mq.edu.au/support/study/student-policy-gateway). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

If you would like to see all the policies relevant to Learning and Teaching visit Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central).
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 Enquiry Service
For all student enquiries, visit Student Connect at ask.mq.edu.au

Equity 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.

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 - 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 - 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 - 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 - 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
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

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