



# BIOL116

## Biology in Practice

S1 Day 2017

*Dept of Biological Sciences*

### Contents

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<u>General Information</u>	2
<u>Learning Outcomes</u>	3
<u>General Assessment Information</u>	3
<u>Assessment Tasks</u>	4
<u>Delivery and Resources</u>	10
<u>Policies and Procedures</u>	11
<u>Graduate Capabilities</u>	12
<u>Changes from Previous Offering</u>	20
<u>Changes since First Published</u>	20

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#### **Disclaimer**

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## General Information

Unit convenor and teaching staff

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E8C 157

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Co-convenor

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E8A 103

Unit Technical Support

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E8B 205

Credit points

3

Prerequisites

Corequisites

Co-badged status

### Unit description

Biology in Practice is a skills based unit that aims to ensure you have the required laboratory, safety, field and practical skills essential to studying biology required as a basis for all units offered in the Department of Biological Sciences. The unit consists of a mixture of lectures, tutorials and practicals. You will acquire hands-on skills for working in the field and the laboratory, including the use of microscopes, data collection, analysis and graphing, aseptic techniques, and skills for microbiological and molecular work, as well as accessing and interpreting scientific literature.

## 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:

- Articulate and practice the importance of health and safety in biological sciences (lab and field).
- Develop and demonstrate competencies in set up, operation and shutting down/clean-up of standard laboratory and field equipment.
- Develop and demonstrate competencies in standard laboratory techniques (e.g. dilutions, aseptic plating, imagery and measurement, labelling).
- Maintain an experimental notebook (field and lab); includes field observations with information related to environmental parameters and conditions.
- Demonstrate competency in data collation, basic statistical analyses and representation by appropriate graphs in reports.
- Describe and practice scientific methods from generating hypotheses and predictions through to following experimental procedures, and undertaking data collection.
- Locate, synthesize, appropriately reference (Harvard style) and communicate scientific information, concepts and your own data through oral, visual and written formats (e.g. class tutorials, report, practical exam).
- Develop competency in working individually or as a team in tutorials, in the field and the laboratory.
- Demonstrate professional behaviour in conduct with colleagues and staff, and the ethical handling of organisms.

## General Assessment Information

**TUTORIALS COMMENCE IN WEEK 1**

## AN ON-LINE PRACTICAL MUST BE COMPLETED IN WEEK 1.

## LAB-BASED PRACTICALS COMMENCE IN WEEK 2.

There are three HURDLE ASSESSMENTS to achieve a pass in BIOL116. Failure to complete a hurdle assessment will lead to a Fail grade for this unit.

A "Skills Achieved" portfolio certificate will be provided through iLearn as students achieve skills during the unit. A student's skills portfolio certificate can be used in support of CV building in 3rd year Capstone Units.

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#"><u>Academic Integrity Modules</u></a>	4%	Yes	3rd March 2017 (Week 1)
<a href="#"><u>Australian Scientist Summary</u></a>	2%	No	10th March 2017 (Week 2)
<a href="#"><u>Lab/Tute Prep Activities</u></a>	10%	No	Weeks 1 to 12
<a href="#"><u>Practical Book Maintenance</u></a>	7%	No	Weeks 4 to 12
<a href="#"><u>Scientific Report</u></a>	15%	Yes	26th May 2017 Week 11
<a href="#"><u>Mid-term Exam</u></a>	20%	No	Week 7
<a href="#"><u>Final Exam</u></a>	30%	Yes	Week 13
<a href="#"><u>Skills Tests</u></a>	12%	No	Weeks 3, 5, 8 & 11

## Academic Integrity Modules

Due: **3rd March 2017 (Week 1)**

Weighting: **4%**

**This is a hurdle assessment task (see [assessment policy](#) for more information on hurdle assessment tasks)**

The Macquarie University Academic Integrity Module has been developed for students to understand their responsibilities and expectations surrounding the proper citation of materials/resources in their work when completing assessments. Several videos must be viewed to enable the completion of the on-line quiz questions that must be undertaken during the first week of Semester 1. This is a hurdle assessment - you are required to participate in this assessment in order to pass BIOL116.

On successful completion you will be able to:

- Locate, synthesize, appropriately reference (Harvard style) and communicate scientific

information, concepts and your own data through oral, visual and written formats (e.g. class tutorials, report, practical exam).

- Demonstrate professional behaviour in conduct with colleagues and staff, and the ethical handling of organisms.

## Australian Scientist Summary

Due: **10th March 2017 (Week 2)**

Weighting: **2%**

Using information from the Australian Academy of Science's *Interviews with Australian Scientists*, students must summarise in their own words the contribution that their chosen scientist has made to Australian or International science, and why this is inspiring to the student. Minimum limitation 200 words - Maximum limitation 300 words. Students must submit their paragraph to Turnitin (for plagiarism assessment).

On successful completion you will be able to:

- Locate, synthesize, appropriately reference (Harvard style) and communicate scientific information, concepts and your own data through oral, visual and written formats (e.g. class tutorials, report, practical exam).
- Develop competency in working individually or as a team in tutorials, in the field and the laboratory.

## Lab/Tute Prep Activities

Due: **Weeks 1 to 12**

Weighting: **10%**

Pre-class activities will be set prior to specific practicals and tutorials. Students must complete the activity prior to attending the practical or tutorial session for a grade to be awarded. Each activity will be assigned between 1% and 2% of your final grade. Most pre-class activities will require reading (e.g. articles, risk assessments, prac notes), accessing material (e.g. videos and other media) and answering questions on-line, or the advance preparation of text for a tutorial.

On successful completion you will be able to:

- Articulate and practice the importance of health and safety in biological sciences (lab and field).
- Develop and demonstrate competencies in set up, operation and shutting down/clean-up of standard laboratory and field equipment.
- Develop and demonstrate competencies in standard laboratory techniques (e.g. dilutions, aseptic plating, imagery and measurement, labelling).
- Demonstrate competency in data collation, basic statistical analyses and representation

by appropriate graphs in reports.

- Locate, synthesize, appropriately reference (Harvard style) and communicate scientific information, concepts and your own data through oral, visual and written formats (e.g. class tutorials, report, practical exam).
- Develop competency in working individually or as a team in tutorials, in the field and the laboratory.
- Demonstrate professional behaviour in conduct with colleagues and staff, and the ethical handling of organisms.

## Practical Book Maintenance

Due: **Weeks 4 to 12**

Weighting: **7%**

Students will maintain a e-prac and field notebook during the course of the semester. Your notebook will be assessed against set criteria that cover the completeness of activities and adherence to expected prac book conventions. Each prac will be graded two weeks after its completion between Weeks 4 and 12 (inclusive). Each time your note book is graded it will be worth 1% of your final grade.

On successful completion you will be able to:

- Articulate and practice the importance of health and safety in biological sciences (lab and field).
- Develop and demonstrate competencies in set up, operation and shutting down/clean-up of standard laboratory and field equipment.
- Develop and demonstrate competencies in standard laboratory techniques (e.g. dilutions, aseptic plating, imagery and measurement, labelling).
- Maintain an experimental notebook (field and lab); includes field observations with information related to environmental parameters and conditions.
- Demonstrate competency in data collation, basic statistical analyses and representation by appropriate graphs in reports.
- Describe and practice scientific methods from generating hypotheses and predictions through to following experimental procedures, and undertaking data collection.
- Develop competency in working individually or as a team in tutorials, in the field and the laboratory.

## Scientific Report

Due: **26th May 2017 Week 11**

Weighting: **15%**

**This is a hurdle assessment task (see [assessment policy](#) for more information on hurdle**

### assessment tasks)

Students must use a standard scientific report structure (outlined in class and detailed on iLearn) to convey the experimental method and results of their field work survey undertaken on campus during practical sessions. Minimum limitation 400 words - Maximum limitation 1000 words. Students must submit their report to Turnitin (for plagiarism assessment). This is a hurdle assessment - you are required to submit this assessment in order to pass BIOL116.

On successful completion you will be able to:

- Articulate and practice the importance of health and safety in biological sciences (lab and field).
- Develop and demonstrate competencies in set up, operation and shutting down/clean-up of standard laboratory and field equipment.
- Demonstrate competency in data collation, basic statistical analyses and representation by appropriate graphs in reports.
- Describe and practice scientific methods from generating hypotheses and predictions through to following experimental procedures, and undertaking data collection.
- Locate, synthesize, appropriately reference (Harvard style) and communicate scientific information, concepts and your own data through oral, visual and written formats (e.g. class tutorials, report, practical exam).
- Develop competency in working individually or as a team in tutorials, in the field and the laboratory.
- Demonstrate professional behaviour in conduct with colleagues and staff, and the ethical handling of organisms.

## Mid-term Exam

Due: **Week 7**

Weighting: **20%**

Students will be examined on the skills they have experienced during the first half of the semester. Skills tested during the exam will include activities taken from material covered in practicals and tutorial sessions. The exam will occur during a student's normal practical class in Week 7.

On successful completion you will be able to:

- Develop and demonstrate competencies in set up, operation and shutting down/clean-up of standard laboratory and field equipment.
- Develop and demonstrate competencies in standard laboratory techniques (e.g. dilutions, aseptic plating, imagery and measurement, labelling).

- Demonstrate competency in data collation, basic statistical analyses and representation by appropriate graphs in reports.
- Locate, synthesize, appropriately reference (Harvard style) and communicate scientific information, concepts and your own data through oral, visual and written formats (e.g. class tutorials, report, practical exam).
- Develop competency in working individually or as a team in tutorials, in the field and the laboratory.
- Demonstrate professional behaviour in conduct with colleagues and staff, and the ethical handling of organisms.

## Final Exam

Due: **Week 13**

Weighting: **30%**

**This is a hurdle assessment task (see [assessment policy](#) for more information on hurdle assessment tasks)**

Students will be examined on the skills they have experienced during the full semester. Skills tested during the exam will include activities taken from material covered in practicals and tutorial sessions. The exam will occur during a student's normal practical class in Week 13. This is a hurdle assessment - you are required to attain at least 50% in this assessment in order to pass BIOL116.

As the final exam is a hurdle assessment, if students have made a serious first attempt but still fail, they must be given one more opportunity. **A serious first attempt in this assessment is defined as a mark of 40% or greater.** Students will be able to re-sit the final exam during the supplementary exam offering.

On successful completion you will be able to:

- Articulate and practice the importance of health and safety in biological sciences (lab and field).
- Develop and demonstrate competencies in set up, operation and shutting down/clean-up of standard laboratory and field equipment.
- Develop and demonstrate competencies in standard laboratory techniques (e.g. dilutions, aseptic plating, imagery and measurement, labelling).
- Demonstrate competency in data collation, basic statistical analyses and representation by appropriate graphs in reports.
- Locate, synthesize, appropriately reference (Harvard style) and communicate scientific information, concepts and your own data through oral, visual and written formats (e.g. class tutorials, report, practical exam).
- Develop competency in working individually or as a team in tutorials, in the field and the



laboratory.

- Demonstrate professional behaviour in conduct with colleagues and staff, and the ethical handling of organisms.

## Skills Tests

Due: **Weeks 3, 5, 8 & 11**

Weighting: **12%**

Students will undertake four in-class skill assessment tasks during practical sessions throughout the semester. Each test is worth 3%, thus contributing to a total of 12% of the final grade.

**Week 3 skills assessment (Lab-based):** Microscopy and digital imagery assessment task.

Students will need to show competence in using a compound microscope and Motic (TM) image software to capture appropriate images.

**Week 5 skills assessment (Lab-based):** Harvard References. Students will need to demonstrate competence in searching for on line journal articles and the application of the Dept of Biological Sciences Harvard referencing style.

**Week 8 skills assessment (Lab-based):** Students need to calculate basic statistics from a data set and graph appropriately using Microsoft Excel (TM) on the lab computers.

**Week 11 skills assessment (Lab-based):** Micro-pipette handling skill. Students will be required to show competence in micro-pipetting techniques .

On successful completion you will be able to:

- Develop and demonstrate competencies in set up, operation and shutting down/clean-up of standard laboratory and field equipment.
- Develop and demonstrate competencies in standard laboratory techniques (e.g. dilutions, aseptic plating, imagery and measurement, labelling).
- Demonstrate competency in data collation, basic statistical analyses and representation by appropriate graphs in reports.
- Locate, synthesize, appropriately reference (Harvard style) and communicate scientific information, concepts and your own data through oral, visual and written formats (e.g. class tutorials, report, practical exam).
- Develop competency in working individually or as a team in tutorials, in the field and the laboratory.
- Demonstrate professional behaviour in conduct with colleagues and staff, and the ethical handling of organisms.

## Delivery and Resources

### Tutorials.

A 1.5 hour tutorial class is presented each week. Tutorials are formulated around both independent and team activities that focus on problem solving and development of resource inquiry and writing skills. Students are encouraged to bring their computer or alternative mobile internet platform (e.g. surface, iPad, mobile) to tutorials to assist with search activities or the use of spreadsheet software (e.g. Excel (TM)). There are pre-tutorial activities where students must come prepared to their class. Tutorial classes are fixed and cannot be changed once selected. Tutorial attendance is compulsory and an attendance roll will be taken.

### Practicals.

A 2.5 hour practical is presented each week and in the majority of cases there is a short pre-prac activity to complete prior to entering the class. As the unit is focused on a student's handling of basic equipment in the lab/field, and development of technical and analytical skills, students will be expected to maintain a prac book. Each prac will be graded two weeks after its completion between Weeks 4 and 12 (inclusive). The prac book will be assessed after students have undertaken their mid-term and final practical exams. There are four skill tests (Weeks 3, 5, 8 and 11) and two practicals exams (Week 7 and 13) all undertaken during set practicals classes.

- Students MUST WEAR ENCLOSED FOOTWEAR to all practical sessions.
- Lab coats are not compulsory.
- All other personal protection such as gloves and safety glasses will be supplied as required by our approved risk assessment procedures.
- There are no dissections of animals in BIOL116, however, we do handle insects and take the ethical handling of all organisms very seriously.
- Students that have a medically-assessed allergy to gloves (latex, plastics, nitrile), pollen or crustaceans, or have a disability should make staff aware in advance so that alternative equipment and activities for certain practicals can be prepared to ensure completion of the unit. Contact: [biol116@mq.edu.au](mailto:biol116@mq.edu.au) and in the subject line use the flag: *Confidential Prac Allergy Notification*.
- Due to University policy on Workplace Health and Safety, access to all laboratory classes will be closed 10 minutes after the start time. **Late entries will not be permitted under any circumstances.**
- Practical attendance is compulsory and an attendance roll will be taken.

### Exams.

BIOL116 has practical exams built into the semester program (Weeks 7 and 13) and does not

hold exams in the official exam period of a semester. Practical exams will cover the following:

- Week 7 Prac Exam will cover Tutorial, Pre-prac activities and Practical experiences or material covered in the first 7 weeks of the term. Students will be tested on equipment use or need to answer technique or analytical questions at ~6-8 stations.
- Week 13 Prac Exam will cover Tutorial, Pre-prac activities, and Practical material or experiences across the whole semester. Students will be tested on equipment use or need to answer technique or analytical questions at ~8-10 stations.
- Students will need to show their last 2 weeks of completed prac activities in the prac book at the final exam for grading. No hardcopy, no grade.

## 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\\_2016.html](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](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](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/](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](http://ask.mq.edu.au).

## Questions about BIOL116?

To ask a question specific to BIOL116 please use the dedicated e-mail address: [biol116@mq.edu.au](mailto:biol116@mq.edu.au). Your e-mail will be answered by our 100-level teaching co-ordinator Dr Kate Barry or directed to the appropriate BIOL116 tutor or the convenors Dr Leanne Armand or Prof. Mariella

Herberstein as appropriate.

## 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://www.mq.edu.au/about\\_us/offices\\_and\\_units/information\\_technology/help/](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

### 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

- Develop and demonstrate competencies in standard laboratory techniques (e.g. dilutions, aseptic plating, imagery and measurement, labelling).
- Maintain an experimental notebook (field and lab); includes field observations with

information related to environmental parameters and conditions.

- Describe and practice scientific methods from generating hypotheses and predictions through to following experimental procedures, and undertaking data collection.
- Locate, synthesize, appropriately reference (Harvard style) and communicate scientific information, concepts and your own data through oral, visual and written formats (e.g. class tutorials, report, practical exam).

## **Assessment tasks**

- Academic Integrity Modules
- Australian Scientist Summary
- Lab/Tute Prep Activities
- Practical Book Maintenance
- Scientific Report
- Mid-term Exam
- Final Exam
- Skills Tests

## **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**

- Articulate and practice the importance of health and safety in biological sciences (lab and field).
- Develop and demonstrate competencies in set up, operation and shutting down/clean-up of standard laboratory and field equipment.
- Develop and demonstrate competencies in standard laboratory techniques (e.g. dilutions, aseptic plating, imagery and measurement, labelling).
- Maintain an experimental notebook (field and lab); includes field observations with information related to environmental parameters and conditions.
- Describe and practice scientific methods from generating hypotheses and predictions through to following experimental procedures, and undertaking data collection.
- Locate, synthesize, appropriately reference (Harvard style) and communicate scientific information, concepts and your own data through oral, visual and written formats (e.g.

class tutorials, report, practical exam).

- Develop competency in working individually or as a team in tutorials, in the field and the laboratory.
- Demonstrate professional behaviour in conduct with colleagues and staff, and the ethical handling of organisms.

## **Assessment tasks**

- Academic Integrity Modules
- Australian Scientist Summary
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- Skills Tests

## **Commitment to Continuous Learning**

Our graduates will have enquiring minds and a literate curiosity which will lead them to pursue knowledge for its own sake. They will continue to pursue learning in their careers and as they participate in the world. They will be capable of reflecting on their experiences and relationships with others and the environment, learning from them, and growing - personally, professionally and socially.

This graduate capability is supported by:

## **Learning outcomes**

- Articulate and practice the importance of health and safety in biological sciences (lab and field).
- Develop and demonstrate competencies in set up, operation and shutting down/clean-up of standard laboratory and field equipment.
- Develop and demonstrate competencies in standard laboratory techniques (e.g. dilutions, aseptic plating, imagery and measurement, labelling).
- Maintain an experimental notebook (field and lab); includes field observations with information related to environmental parameters and conditions.
- Locate, synthesize, appropriately reference (Harvard style) and communicate scientific information, concepts and your own data through oral, visual and written formats (e.g. class tutorials, report, practical exam).
- Demonstrate professional behaviour in conduct with colleagues and staff, and the ethical handling of organisms.

## Assessment tasks

- Academic Integrity Modules
- Australian Scientist Summary
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- Final Exam
- Skills Tests

## 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

- Articulate and practice the importance of health and safety in biological sciences (lab and field).
- Develop and demonstrate competencies in set up, operation and shutting down/clean-up of standard laboratory and field equipment.
- Develop and demonstrate competencies in standard laboratory techniques (e.g. dilutions, aseptic plating, imagery and measurement, labelling).
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## Assessment tasks

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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

- Develop and demonstrate competencies in standard laboratory techniques (e.g. dilutions, aseptic plating, imagery and measurement, labelling).
- Maintain an experimental notebook (field and lab); includes field observations with information related to environmental parameters and conditions.
- Demonstrate competency in data collation, basic statistical analyses and representation by appropriate graphs in reports.
- Describe and practice scientific methods from generating hypotheses and predictions through to following experimental procedures, and undertaking data collection.
- Locate, synthesize, appropriately reference (Harvard style) and communicate scientific information, concepts and your own data through oral, visual and written formats (e.g. class tutorials, report, practical exam).

## Assessment tasks

- Academic Integrity Modules
- Australian Scientist Summary
- Lab/Tute Prep Activities
- Practical Book Maintenance
- Scientific Report



- Mid-term Exam
- Final Exam
- Skills Tests

## 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

- Develop and demonstrate competencies in set up, operation and shutting down/clean-up of standard laboratory and field equipment.
- Develop and demonstrate competencies in standard laboratory techniques (e.g. dilutions, aseptic plating, imagery and measurement, labelling).
- Maintain an experimental notebook (field and lab); includes field observations with information related to environmental parameters and conditions.
- Demonstrate competency in data collation, basic statistical analyses and representation by appropriate graphs in reports.
- Describe and practice scientific methods from generating hypotheses and predictions through to following experimental procedures, and undertaking data collection.
- Locate, synthesize, appropriately reference (Harvard style) and communicate scientific information, concepts and your own data through oral, visual and written formats (e.g. class tutorials, report, practical exam).
- Develop competency in working individually or as a team in tutorials, in the field and the laboratory.

### Assessment tasks

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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

- Articulate and practice the importance of health and safety in biological sciences (lab and field).
- Develop and demonstrate competencies in standard laboratory techniques (e.g. dilutions, aseptic plating, imagery and measurement, labelling).
- Maintain an experimental notebook (field and lab); includes field observations with information related to environmental parameters and conditions.
- Demonstrate competency in data collation, basic statistical analyses and representation by appropriate graphs in reports.
- Describe and practice scientific methods from generating hypotheses and predictions through to following experimental procedures, and undertaking data collection.
- Locate, synthesize, appropriately reference (Harvard style) and communicate scientific information, concepts and your own data through oral, visual and written formats (e.g. class tutorials, report, practical exam).
- Develop competency in working individually or as a team in tutorials, in the field and the laboratory.
- Demonstrate professional behaviour in conduct with colleagues and staff, and the ethical handling of organisms.

### Assessment tasks

- Academic Integrity Modules
- Australian Scientist Summary
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- Mid-term Exam
- Final Exam
- Skills Tests

## Engaged and Ethical Local and Global citizens

As local citizens our graduates will be aware of indigenous perspectives and of the nation's historical context. They will be engaged with the challenges of contemporary society and with knowledge and ideas. We want our graduates to have respect for diversity, to be open-minded, sensitive to others and inclusive, and to be open to other cultures and perspectives: they should have a level of cultural literacy. Our graduates should be aware of disadvantage and social justice, and be willing to participate to help create a wiser and better society.

This graduate capability is supported by:

### Learning outcomes

- Maintain an experimental notebook (field and lab); includes field observations with information related to environmental parameters and conditions.
- Develop competency in working individually or as a team in tutorials, in the field and the laboratory.
- Demonstrate professional behaviour in conduct with colleagues and staff, and the ethical handling of organisms.

### Assessment tasks

- Academic Integrity Modules
- Australian Scientist Summary
- Lab/Tute Prep Activities
- Practical Book Maintenance
- Scientific Report
- Mid-term Exam
- Final Exam
- Skills Tests

## Socially and Environmentally Active and Responsible

We want our graduates to be aware of and have respect for self and others; to be able to work with others as a leader and a team player; to have a sense of connectedness with others and country; and to have a sense of mutual obligation. Our graduates should be informed and active participants in moving society towards sustainability.

This graduate capability is supported by:

### Learning outcomes

- Articulate and practice the importance of health and safety in biological sciences (lab and field).
- Maintain an experimental notebook (field and lab); includes field observations with

information related to environmental parameters and conditions.

- Develop competency in working individually or as a team in tutorials, in the field and the laboratory.
- Demonstrate professional behaviour in conduct with colleagues and staff, and the ethical handling of organisms.

## Assessment tasks

- Academic Integrity Modules
- Australian Scientist Summary
- Lab/Tute Prep Activities
- Practical Book Maintenance
- Scientific Report
- Mid-term Exam
- Final Exam
- Skills Tests

## Changes from Previous Offering

2016: Addition of Academic Integrity Module assessment and decrease in value of prac book assessment. Rescheduling of assessment task due dates. Identification of 3 Hurdle assessments.

2015: This is the first year that BIOL116 has been offered both Internally (Day) and Externally.

## Changes since First Published

Date	Description
24/02/2017	More hurdle assessment info provided.
21/02/2017	Updated teaching co-ordinator details
13/02/2017	Change preferred contact of teaching coordinator
13/02/2017	Added first year coordinator contact details