



# BIOL601

## Ecology

S2 External 2018

*Dept of Biological Sciences*

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### Disclaimer

Macquarie University has taken all reasonable measures to ensure the information in this publication is accurate and up-to-date. However, the information may change or become out-dated as a result of change in University policies, procedures or rules. The University reserves the right to make changes to any information in this publication without notice. Users of this publication are advised to check the website version of this publication [or the relevant faculty or department] before acting on any information in this publication.

## General Information

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Credit points

4

Prerequisites

Admission to MConsBiol or GradDipConsBiol or GradCertConsBiol or MSc

Corequisites

Co-badged status

BIOL601

Unit description

Ecology is the study of the distribution and abundance of organisms and of the processes that generate these patterns. This unit covers basic ecological concepts at the level of organisms, populations, communities, and ecosystems. We study how interactions among organisms - and between organisms and their physical environment - shape the natural world. This unit also addresses how ecological concepts can be applied to current issues such as climate change, conservation, fisheries and agriculture. There is a compulsory field trip to Smiths Lake in the September vacation.

## 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:

- Explain how organisms interact with each other and with the environment.
- Analyse how these interactions influence patterns of distribution and abundance.
- Analyse the structure of and changes in populations, communities, and ecosystems.
- Apply ecological concepts to novel situations, especially to contemporary issues.
- Identify appropriate scientific journal articles, and critically evaluate and synthesise key findings and use to confirm or refute your own findings.
- Identify and synthesise important ecological principles.
- Develop questions and pose hypotheses about ecological patterns and processes.
- Collect and analyse ecological data in order to evaluate hypotheses.

## General Assessment Information

### Expected workload

Each three credit point unit at Macquarie is equivalent to 150 hours of study. In BIOL227, we have broken this down into the following activities.

Activity	Time requirement (hrs)	Weighting (% of overall grade)
Lectures	25	
Readings	24	
Practicals	4 x 3 hours	
Fieldtrip	6 x 3 hours	
Review for mid-semester test	10	15%
Pre-prac quiz	3.5	5%
Ecology Reserve Report	14	20%
Fieldtrip Report	18	25%
Final exam	25	35%

### Assignment submission

The written assessments (Practical Report and Field Trip Report) are to be submitted via the appropriate **TURNITIN link on iLearn by 11:59 pm on the due date** (i.e. paper copies of these assessments are NOT required by either internal or external students).

TURNITIN is a powerful online tool for the detection of plagiarism. It works by comparing the text of a submitted document (i.e., your assignment) with the work of your current classmates, past students in BIOL227 and other courses at Macquarie, as well as published material in books, journals and on the web.

## To submit your assignment via turnitin:

1. Visit the *Assessments* tab in iLearn, look for the *turnitin* header and select the relevant assessment item (Practical Report or Field Trip Report)
2. Click on the **Submit Paper** tab.
3. Enter a **Submission Title**.
4. **Select Submission Part if there are multiple parts available.**
5. **Click Browse and select the file you would like to submit.**
6. **Click Add Submission.**

## Academic Honesty

Presenting the work of another person as one's own is a serious breach of the University's rules and carries significant penalties. The University's Academic Integrity Policy can be found at:

<https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policies/academic-integrity>

In this unit, we will be checking written work for plagiarism using TURNITIN. Penalties for plagiarism may include a zero mark for the assignment or in more extreme cases, failure of the unit.

## Extensions, penalties and Special Consideration

Late assignments will attract a penalty of **-10%** of the total marks allocated to the exercise per day.

You may hand in your work after the due date and escape penalty only if you have an acceptable reason (usually a medical certificate). Discuss your problem with the Lecturer as early as possible before the due date.

Information about the Special Considerations policy and procedure is online at Policy Central: <https://staff.mq.edu.au/work4/strategy-planning-and-governance/university-policies-and-procedures/policies/special-consideration>

All requests for Special Consideration should be submitted using the online form: [ask.mq.edu.au](https://ask.mq.edu.au)

## Final exam

If you receive special consideration for the final exam, a supplementary exam will be scheduled in the week of December 17-21 2018. By making a special consideration application for the final exam you are declaring yourself available for a resit during the supplementary examination period and will not be eligible for a second special consideration approval based on pre-existing commitments. Please ensure you are familiar with the policy prior to submitting an application. Approved applicants will receive an individual notification one week prior to the exam with the exact date and time of their supplementary examination.

## Return of Assessment Tasks

Marked assignments and feedback will be available online through the turnitin submission link 2-3 weeks after assignment submission.

## Grading

In order to pass this unit you must (a) attend and participate in the fieldtrip activities at Stanwell Tops, and (b) attain an overall grade of 50% or more.

## Assessment Tasks

Name	Weighting	Hurdle	Due
<u>Lecture participation</u>	5%	No	Weekly
<u>Pre-prac quizzes</u>	5%	No	Weeks 3-4
<u>Mid-semester Test</u>	15%	No	Week 7, 11 September 2018
<u>Ecology Reserve Report</u>	15%	No	21 September 2018
<u>Field Trip Report</u>	25%	No	Week 11, 22 October 2018
<u>Final Exam</u>	35%	No	Examination period

## Lecture participation

Due: **Weekly**

Weighting: **5%**

During each lecture a few of questions will be asked using the Echo 360 ALP in iLearn. Students will need to respond during class on their smart device (laptop, tablet or smart phone after downloading the Echo 360 ALP mobile app., for this to work you must log the BIOI227/601 iLearn unit and click on the Echo 360 ALP once to link your profile with this class, if you don't have a device talk to the unit convenor). Participation for **internal** students requires **lecture attendance and participation** (either in person or online), recordings will be paused and muted

during activities and activity slide results hidden so that **external** students can participate **at home**. External students will be expected to undertake lectures by the end of the week that the lecture was given in (i.e 11:59pm on Sundays).

On successful completion you will be able to:

- Explain how organisms interact with each other and with the environment.
- Analyse how these interactions influence patterns of distribution and abundance.
- Analyse the structure of and changes in populations, communities, and ecosystems.
- Apply ecological concepts to novel situations, especially to contemporary issues.
- Identify and synthesise important ecological principles.

## Pre-prac quizzes

Due: **Weeks 3-4**

Weighting: **5%**

Pre-prac quizzes will involve reading material, thinking about hypotheses to be tested and experimental designs. The purpose of this is to provide you with appropriate background to undertake the prac, so we can “get stuck in” straight away. Pre-Prac Quizzes will close as soon as your registered prac class begins. You should be expected to spend approximately 1.5 hours on this activity, prior to the pracs for Weeks 3 and 4. Note that your first written assessment will be based on one of these two fieldbased activities.

On successful completion you will be able to:

- Develop questions and pose hypotheses about ecological patterns and processes.
- Collect and analyse ecological data in order to evaluate hypotheses.

## Mid-semester Test

Due: **Week 7, 11 September 2018**

Weighting: **15%**

An in-class, open book test will be held in Week 7. This will be based on lecture material AND recommended readings from Weeks 1-6. The test will be multiple choice and will include numerical exercises similar to those taught in lectures. Questions will be randomly allocated to students. This test will run for 45 minutes in duration. **Internal students must be physically present in the lecture theatre** for this test and you will be given a password in class to access the test. **External Students will be given different access based on their external enrolment (no password) and must complete the test between 12pm Tuesday 11 September and 11:59pm Sunday 16 September.**

On successful completion you will be able to:

- Explain how organisms interact with each other and with the environment.
- Analyse how these interactions influence patterns of distribution and abundance.

- Analyse the structure of and changes in populations, communities, and ecosystems.
- Identify and synthesise important ecological principles.

## Ecology Reserve Report

Due: **21 September 2018**

Weighting: **15%**

One of two class pracs conducted in the Macquarie University Ecology Reserve will be written up as an individual report. The report (max 1000 words **excluding Abstract, Acknowledgements and References**) is to be in the style of the journal *Austral Ecology*. The journal has strict formatting instructions that must be followed throughout. These can be found at the bottom of the instructions for authors, on the journal web-site: [http://onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1442-9993/homepage/ForAuthors.html](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1442-9993/homepage/ForAuthors.html). Specifics on the marking scheme and formatting can be found on iLearn. This activity should require 14 hours of work.

On successful completion you will be able to:

- Explain how organisms interact with each other and with the environment.
- Analyse how these interactions influence patterns of distribution and abundance.
- Analyse the structure of and changes in populations, communities, and ecosystems.
- Apply ecological concepts to novel situations, especially to contemporary issues.
- Identify appropriate scientific journal articles, and critically evaluate and synthesise key findings and use to confirm or refute your own findings.
- Identify and synthesise important ecological principles.
- Develop questions and pose hypotheses about ecological patterns and processes.
- Collect and analyse ecological data in order to evaluate hypotheses.

## Field Trip Report

Due: **Week 11, 22 October 2018**

Weighting: **25%**

The second report will communicate the results of the independent research project conducted on the Stanwell Tops field trip. The word-limit for this second report, which will also be formatted as an *Austral Ecology* manuscript, is 1500 words (**again excluding Abstract, Acknowledgements and References**). Further details can be found in the Field Trip practical notes (which will be posted on iLearn). This activity should require 18 hours of work.

On successful completion you will be able to:

- Explain how organisms interact with each other and with the environment.
- Analyse how these interactions influence patterns of distribution and abundance.
- Analyse the structure of and changes in populations, communities, and ecosystems.

- Apply ecological concepts to novel situations, especially to contemporary issues.
- Identify appropriate scientific journal articles, and critically evaluate and synthesise key findings and use to confirm or refute your own findings.
- Identify and synthesise important ecological principles.
- Develop questions and pose hypotheses about ecological patterns and processes.
- Collect and analyse ecological data in order to evaluate hypotheses.

## Final Exam

Due: **Examination period**

Weighting: **35%**

The final exam (worth 35% of your mark) will be held during the Semester 2 Exam Period and will be 2 hr (plus 10 min reading time). Please consult the University Handbook to determine the commencement and finishing dates of the compulsory exam period. You will be permitted to take a non-programmable calculator and/or English language dictionary into the exam. Notes will not be permitted. The exam will focus on material from Weeks 7-13, but short answer questions may also require knowledge of subject matter from Weeks 1-6.

The exam questions have been carefully written to test understanding, not rote learning:

- You will NOT be required to regurgitate definitions or the details of case studies we have discussed in class;
- You WILL need to be able to apply ecological principles to solve real-world problems, often this will involve combining concepts from several lectures to solve a problem.

If you receive special consideration for the final exam, a supplementary exam will be scheduled in the week of December 17-21 2018. By making a special consideration application for the final exam you are declaring yourself available for a resit during the supplementary examination period and will not be eligible for a second special consideration approval based on pre-existing commitments. Please ensure you are familiar with the policy prior to submitting an application. Approved applicants will receive an individual notification one week prior to the exam with the exact date and time of their supplementary examination.

On successful completion you will be able to:

- Explain how organisms interact with each other and with the environment.
- Analyse how these interactions influence patterns of distribution and abundance.
- Analyse the structure of and changes in populations, communities, and ecosystems.
- Apply ecological concepts to novel situations, especially to contemporary issues.
- Identify and synthesise important ecological principles.
- Develop questions and pose hypotheses about ecological patterns and processes.

## Delivery and Resources

### Unit web page

Lecture slides and recordings (accessible through the APL Echo 360 block), unit readings, copies of all unit hand-outs and helpful resources for completion of assessments will be available electronically, through iLearn. Consequently, it is strongly recommended that you interact with the BIOL227/601 iLearn site unit at least weekly. 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/](http://www.mq.edu.au/iLearn/student_info/)

**Experiencing technical difficulties?** 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/)

### Text books

While there is a text book that some lectures will follow, you do not need to purchase this as a copy will be in special reserve and online:

Begon M, Howarth RW, Townsend CR (2014) *Essentials of ecology*. 4th edition. Blackwell Scientific Publications, Cambridge. The 3rd (2008) edition is also acceptable, if you can come by it second hand.

*Other text books also available in special reserve:*

- Begon M, Harper JL, Townsend CR (1996) *Ecology: individuals, populations and communities*. 3rd Edition. Blackwell Science, Boston.
- Krebs CJ (2001) *Ecology: the experimental analysis of distribution and abundance*. 5<sup>th</sup> Edition. Benjamin Cummings, Publishers, San Francisco, London
- Krebs CJ (2008) *The ecological world view*. 5<sup>th</sup> Edition. CSIRO Publishing, Collingwood
- Ricklefs R, Miller GL (2000) *Ecology*. 4<sup>th</sup> Edition. WH Freeman and Co. New York.
- Underwood AJ (1997) *Experiments in ecology: their logical design and interpretation using analysis of variance*. Cambridge University Press, New York.

## Unit Schedule

**Lecture timetable \*\*\*NB: All internal students are expected to attend every lecture**

Week	Date	Lecture	Topic	Lecturer
<i>Part 1: Ecological Methods and Organisms and their environment</i>				
1	31 July	1	Ecology: what is it and how is it done?	LB
	1 Aug	2	Conditions, resources and the niche concept	LB
2	7 Aug	3	Distributions	LB
	8 Aug	4	An introduction to ecological field sampling	KM
3	14 Aug	5	Global patterns of productivity	LB
	15 Aug	6	Effects of environment on life history	LB
<i>Part 3: Communities and ecosystems</i>				
4	21 Aug	7	Describing community structure: diversity and species richness	LB
	22 Aug	8	The more the merrier: why biodiversity matters	KM
<i>Part 2: Interactions among species</i>				
5	28 Aug	9	Population growth and intraspecific competition	LB
	29 Aug	10	Interspecific competition	LB
6	4 Sept	11	Predation	LB
	5 Sept	12	Parasitism and disease	LB
7	11 Sept	13	Mid semester test	LB
	12 Sept	14	Stanwell Tops: Introduction to Field Trip	KM
<i>Semester Break &amp; Stanwell Tops Field Trip</i>				
8	2 Oct	15	Facilitation	LB
	3 Oct	16	Processes influencing community structure: disturbance and succession	KM
9	9 Oct	17	Processes influencing community structure: island biogeography	KM
	10 Oct	18	The flux of energy through food webs i	KM

10	16 Oct	19	The flux of energy through food webs ii	KM
	17 Oct	20	Spatial subsidies: another time, another place	KM
<i>Part 4. Applied ecological issues</i>				
11	23 Oct	21	Ecological impact assessment	KM
	24 Oct	22	Restoration ecology	KM
12	30 Oct	23	Invasive species and their management	KM
	31 Oct	24	Managed ecosystems: agriculture, fisheries and forestry	KM
13	6 Nov	25	Global climate change	LB
	7 Nov	26	Exam discussion, revision, 300-level unit information	LB & KM

LB: Dr Linda Beaumont

KM: Dr Katherine McClellan

## Learning and Teaching Activities

### Teaching and learning strategy

Ecology is an evolving science, with theories constantly being developed, tested and refined. The knowledge and practical skills that are derived from the study of ecology can be used to help understand and solve some of the most pressing environmental issues of our era. Consequently, in this unit the emphasis will not be on rote-learning 'facts' but on developing the ecological problem-solving skills required to better understand and manage natural resources. In the lectures you will be introduced to some of the tools that you will need for this problem solving. In the practicals you will be required to integrate these skills to define your own research questions and develop the methods required to test them. While you may find this approach rather challenging at first, your tutors and lecturer will be there to guide you along the way and, at the end, you will have the satisfaction of having completed your own independent project as a real ecologist. We will endeavour to make the lectures as interactive as possible, supplementing them with in-class activities. We encourage you to interact with the material as much as possible and participate actively as this will maximise your learning. For several assignments in this course, it may be helpful (or required) to work with other students and we encourage you to do so. However, you are responsible for the ownership of your work, and we will take cases of plagiarism very seriously.

### Compulsory Practical Classes

Internal students: Practicals in weeks 2-5 only. External students: On-campus weekend 11-12 August (end of Week 2) from 9am-4pm. ALL STUDENTS ARE EXPECTED TO ATTEND ALL

PRACTICALS. If you cannot make your assigned prac due to an extenuating circumstance (1) let us know immediately, (2) attend a make up prac (i.e. Internal students will need to attend the OCS, and external students will need to make up the prac by attending an internal prac slot).

## Compulsory Field Trip to Stanwell Tops

23-25 September at The Tops Conference Centre, Stanwell Tops. Attendance is compulsory. All students will stay at the conference centre. The cost of the excursion will be \$200, which covers all food and accommodation. This amount will be due by Friday 24 August (end of Week 4). This is a hurdle assessment, i.e. students must attend the field trip, participate in all activities and submit the associated written assessment to pass the unit. Students who cannot attend the fieldtrip should NOT enrol in this unit.

## 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) (<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) (<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) (<https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/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/study/getting-started/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.m](#)

[mq.edu.au](http://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](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

- Apply ecological concepts to novel situations, especially to contemporary issues.
- Develop questions and pose hypotheses about ecological patterns and processes.

### Assessment tasks

- Pre-prac quizzes

- Ecology Reserve Report
- Field Trip Report
- Final Exam

## 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:

### **Assessment task**

- Lecture participation

## 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:

### **Assessment task**

- Lecture participation

## 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**

- Explain how organisms interact with each other and with the environment.
- Analyse how these interactions influence patterns of distribution and abundance.
- Analyse the structure of and changes in populations, communities, and ecosystems.
- Apply ecological concepts to novel situations, especially to contemporary issues.

- Identify appropriate scientific journal articles, and critically evaluate and synthesise key findings and use to confirm or refute your own findings.
- Identify and synthesise important ecological principles.
- Develop questions and pose hypotheses about ecological patterns and processes.
- Collect and analyse ecological data in order to evaluate hypotheses.

## **Assessment tasks**

- Lecture participation
- Pre-prac quizzes
- Mid-semester Test
- Ecology Reserve Report
- Field Trip Report
- Final Exam

## **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**

- Explain how organisms interact with each other and with the environment.
- Analyse how these interactions influence patterns of distribution and abundance.
- Analyse the structure of and changes in populations, communities, and ecosystems.
- Apply ecological concepts to novel situations, especially to contemporary issues.
- Identify appropriate scientific journal articles, and critically evaluate and synthesise key findings and use to confirm or refute your own findings.
- Identify and synthesise important ecological principles.
- Develop questions and pose hypotheses about ecological patterns and processes.
- Collect and analyse ecological data in order to evaluate hypotheses.

## **Assessment tasks**

- Lecture participation
- Pre-prac quizzes
- Mid-semester Test
- Ecology Reserve Report

- Field Trip Report
- Final Exam

## 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

- Analyse the structure of and changes in populations, communities, and ecosystems.
- Apply ecological concepts to novel situations, especially to contemporary issues.
- Identify appropriate scientific journal articles, and critically evaluate and synthesise key findings and use to confirm or refute your own findings.
- Identify and synthesise important ecological principles.
- Develop questions and pose hypotheses about ecological patterns and processes.
- Collect and analyse ecological data in order to evaluate hypotheses.

### Assessment tasks

- Pre-prac quizzes
- Mid-semester Test
- Ecology Reserve Report
- Field Trip Report
- Final Exam

## 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

- Apply ecological concepts to novel situations, especially to contemporary issues.
- Identify appropriate scientific journal articles, and critically evaluate and synthesise key findings and use to confirm or refute your own findings.

- Identify and synthesise important ecological principles.
- Collect and analyse ecological data in order to evaluate hypotheses.

## **Assessment tasks**

- Lecture participation
- Pre-prac quizzes
- Mid-semester Test
- Ecology Reserve Report
- Field Trip Report
- Final Exam

## **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**

- Analyse the structure of and changes in populations, communities, and ecosystems.
- Apply ecological concepts to novel situations, especially to contemporary issues.

## **Assessment tasks**

- Mid-semester Test
- Ecology Reserve Report
- Field Trip Report
- Final Exam

## **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**

- Analyse the structure of and changes in populations, communities, and ecosystems.
- Apply ecological concepts to novel situations, especially to contemporary issues.

- Identify and synthesise important ecological principles.

## Assessment tasks

- Mid-semester Test
- Ecology Reserve Report
- Field Trip Report
- Final Exam

## Changes from Previous Offering

- There is only one off-campus overnight field trip this year (Sunday 23<sup>th</sup> to Tuesday 25<sup>th</sup> September), which all students must attend. Sign-up for the field trip is fully online. Please register through eStudent. **Details of how to pay for the fieldtrip will be provided in the first practical (for internal students) or by email (for external students) and on iLearn.**
- The turnitin plagiarism check for the written assessments will be available through iLearn
- There will be a mid-semester test that internal students will undertake in class, and external students will undertake online. This is designed to encourage problem-solving skills, reinforce lecture material and ensure students remain up-to-date.

## Changes since First Published

Date	Description
27/07/2018	-
26/07/2018	Updated Special Considerations policy and added more info about assessments and teaching