



BIOL114

Organisms to Ecosystems

S1 External 2017

Dept of Biological Sciences

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General Information

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Credit points

3

Prerequisites

Corequisites

BIOL116 or admission to BEnv or BArch

Co-badged status

Unit description

This unit introduces students to the essential concepts in current biology. BIOL114 builds on the laboratory, statistical and communication skills obtained in BIOL116. Students who take BIOL114 must also take BIOL116 as a co-requisite. BIOL114 forms the first step for students pursuing a career in the biological sciences, and provides a basis for students in other disciplines who wish to maintain an interest in this dynamic field. The theme of this unit is evolution. The first part of the unit is concerned with the origin of life and discusses current theories on how life may have arisen on a previously lifeless planet. We discuss evolutionary theory in detail including some of the genetic principles that underlie evolution. In the second part we introduce the major groups of organisms examining their diversity and how they function. In the final part we discuss the ecological interactions between organisms from the small scale to global patterns. Throughout the unit, these core concepts are illustrated with examples from current research. BIOL114 is designed as a companion unit to BIOL115 in Session 2.

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:

- Define evolution and describe its main mechanisms
- Define the the major evolutionary transitions of organisms on earth
- Differentiate the main groups of organisms
- Interpret the evolutionary relationships between groups of organisms
- Contrast major ecological processes that drive evolution
- Describe global and continental biogeographic patterns
- Synthesise experimental results and information from the scientific literature to prepare a scientific report

General Assessment Information

Details about the unit assessments and grading rubrics will be posted on iLearn ahead of the due dates.

Assessment Tasks

Name	Weighting	Hurdle	Due
Weekly activities	10%	No	Weekly

Name	Weighting	Hurdle	Due
<u>Mid-semester test</u>	15%	No	April 11
<u>Research Report</u>	25%	No	May 1
<u>Final Exam</u>	50%	No	After Week 13

Weekly activities

Due: **Weekly**

Weighting: **10%**

The Weekly Activities are accessible through iLearn. They are designed to keep you up to date with the unit material and prepare you for assessments and practicals.

Weekly quizzes will have questions about the preceding lectures as well as the upcoming practicals. You must have done the weekly quizzes in order to attend the practicals to make sure you are familiar with the prac material.

You have two attempts for each quiz, and the higher mark will be taken.

The weekly quizzes open Mondays at 9am and close on Thursday at 9am.

On successful completion you will be able to:

- Define evolution and describe its main mechanisms
- Define the the major evolutionary transitions of organisms on earth
- Differentiate the main groups of organisms
- Contrast major ecological processes that drive evolution
- Describe global and continental biogeographic patterns

Mid-semester test

Due: **April 11**

Weighting: **15%**

The mid-semester test will consist of multiple choice and short answer questions that cover all lecture material up to and including Face to Face Lecture 18.

The test will be conducted during the Tuesday lecture under exam conditions, that is, silently and with no communication between students. No written material, programmable calculators, mobile phones or electronic tablets may be brought into the exam room.

On successful completion you will be able to:

- Define evolution and describe its main mechanisms
- Define the the major evolutionary transitions of organisms on earth

Research Report

Due: **May 1**

Weighting: **25%**

In this assignment you have to write a short research report on the experiment we have conducted in the practicals. The report will be in the style of a scientific paper, but somewhat shorter. It will contain a title, introduction, methods, results (with figures and/or tables), discussion and reference list.

Prac 5 is dedicated to explaining all elements of the research report and students will be provided with more detail and marking rubrics at the start of semester.

On successful completion you will be able to:

- Differentiate the main groups of organisms
- Contrast major ecological processes that drive evolution
- Synthesise experimental results and information from the scientific literature to prepare a scientific report

Final Exam

Due: **After Week 13**

Weighting: **50%**

The final exam is a two-hour exam with a mixture of multiple choice, short answer and medium answer questions. The exam will cover *all* Lecture and Practical material presented in the unit.

Exam conditions will be as for mid-semester test: silently and with no communication between students. No written material, programmable calculators or mobile phones may be brought into the exam room. Paper language translating dictionaries will be allowed. Please notify the convenor if this required.

The University will announce the examination date towards the end of semester. We will relay that date via an announcement in Lectures and via iLearn.

On successful completion you will be able to:

- Define evolution and describe its main mechanisms
- Define the the major evolutionary transitions of organisms on earth
- Differentiate the main groups of organisms
- Interpret the evolutionary relationships between groups of organisms
- Contrast major ecological processes that drive evolution
- Describe global and continental biogeographic patterns
- Synthesise experimental results and information from the scientific literature to prepare a scientific report

Delivery and Resources

iLEARN

The primary means of communication for this unit is via iLearn™ which can be accessed by most web browsers from inside or outside the University.

We expect you to use iLearn for:

- Doing the Weekly Quizzes
- Regularly checking subject announcements (at least twice per week)
- Discussing the unit and its content with staff and other students
- Downloading Lecture and Practical materials
- Downloading reference materials

Logging in to iLearn

- The iLearn login page is: <https://ilearn.mq.edu.au/>
- Username: your student number
- Problems? Please contact [Student IT Help](#)
- Need extra help due to a disability/health condition? Please visit the Student Services Website : students.mq.edu.au/campus_life/wellbeing

UNIT COMPLETION REQUIREMENTS

Minimum requirements include:

1. Submit all assessments and attempt all exams
2. Attend at least 7/10 practical sessions

Missed Practicals

If you know you will miss a practical or if you missed one, please email the **First Year Coordinator: biol114@mq.edu.au**

Inform tutor that you have submitted consideration and ensure the role is marked accordingly.

There may be alternative practical slots available for you to catch up on the missed practical, including attending the on-campus session. Please contact the **First Year Coordinator** to ensure there is room for you.

Students who miss more than 3 out of the 10 practicals are unable to pass the unit.

Overall grades

The University grading is: fail (F <50%), pass (P 50%-64%), credit (CR 65%-74%), distinction (D 75%-84%) and high distinction (HD 85%-100%).

Disruption to Study

If you apply for Disruption to Study for your final examination, you must make yourself available for the week of July 24-28, 2017. If you are not available at that time, there is no guarantee an additional examination time will be offered. Specific examination dates and times will be determined at a later date.

Assignment submission, Turnitin and Plagiarism

This is a paperless unit so no paper submissions will be required. All written assignments will be submitted through iLearn via a Turnitin link.

Turnitin is an online program that detects plagiarised pieces of work by comparing your writing with other published work including:

- websites, books, journal articles
- other submitted assignments - from across the world in the current or past years

Plagiarism involves using the work of another person and presenting it as one's own. To avoid plagiarism,

1. prepare your work well ahead of the due date
2. write in your own words (no copy paste)
3. cite the source of the information you are writing about

Do not under any circumstances lend your work to another student. If that student plagiarises your work you too may be liable.

The penalties imposed by the University for plagiarism are serious and may include expulsion from the University.

A full outline of the Universities policy on plagiarism is found at http://www.mq.edu.au/policy/docs/academic_honesty/policy.html.

Extensions and penalties

10% will be deducted for each day an assignment is late. If you are unable to submit the assignment by the due date, then an extension must be sought *before the due date* unless this is absolutely impossible. To support your extension you may be asked to submit a special consideration. **All applications for extensions of deadlines must be submitted to the First Year Coordinator: biol114@mq.edu.au**

RESOURCES and SUPPORT

How to find the answers

1. Please read the unit outline
2. Consult iLearn - often the majority of questions have already been asked and answered
3. If the answer to a question will benefit others, please post it on iLearn. We will answer it in time.
4. **First Year Coordinator:** questions about practical class allocations, mark queries and organising alternative times for assessments or extensions.
5. **Scientific officer:** only during practical classes and only technical questions
6. **Tutor:** questions throughout practical sessions and specific queries about assignments
7. **Unit convenors:** lecture content, withdrawal, personal issues
8. Unexpected adjustments made during the course will be announced via announcements so make sure you check iLearn regularly.

EMAIL PROTOCOL

1. Always put the subject in the subject line i.e. BIOL114 – if you do not do this you risk the email not being noticed
2. Please be courteous and patient - we will endeavour to reply to your email within 48 hours

Text Book

The textbook for BIOL114 (and BIOL115) is [Campbell Biology](#) (10th Edition, Australian and NZ edition).

The book is available in hard copy from the campus co-op shop (for around \$170) or as [ebook](#) (for around \$60).

The textbook comes with an electronic resource called 'Mastering Biology' (for an extra cost), which includes animations, exercises and a question bank for study. We recommend the use of Mastering Biology to fully engage with the material, but will not use it formally during the course.

The text book is also available in the library and there might be earlier editions available second hand that are also suitable.

WRITING AIDS

Pechenik's guide to writing about biology is also recommended for this course as well as the following website.

<http://abacus.bates.edu/~ganderso/biology/resources/writing/HTWsections.html>.

This website is comprehensive and will be incredibly useful throughout the semester.

Unit Schedule

See iLearn for the most current lecture and prac schedule.

Lectures

Lecture type	Day	Time	Location
Face to Face or iLearn recording	Tuesday	9:00-10:00am	E7B Mason Theatre
Face to Face or iLearn recording	Wednesday	10:00-11:00am	E7B Mason Theatre
iLearn Lecture	Monday-Friday	from 9am	Online Only

Practicals

Practical last for 2 hours and slots run from Thursday 10 am and finish Friday at 2pm. When you enroll you have to select one slot that works with your timetable. If you cannot find a suitable slot, you can attend the practicals during the on-campus session as external.

All pracs will be run in Science Labs 106, 110 and 112, 6 Wallys Walk (E8C).

Oncampus dates

- Saturday March 18th: 9am-5pm
 - Prac 1, 2, 3
- Thursday April 20th: 9am-5pm
 - Pracs 4, 5, 6
- Friday April 21st: 9am-5pm
 - Pracs 7, 8
- Saturday May 20th: 9am-5pm
 - Mid-semester test for external will run from 9:15-10:15am
 - Pracs 9, 10
 - We will discuss the prac report and the final exam

All pracs will be run in Science Labs 106, 110 and 112, 6 Wallys Walk (E8C).

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_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

Disruption to Studies Policy (in effect until Dec 4th, 2017): 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/

Results

Results shown in *iLearn*, or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit ask.mq.edu.au.

Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to improve your marks and take control of your study.

- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module for Students](#)
- [Ask a Learning Adviser](#)

Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide

appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

IT Help

For help with University computer systems and technology, visit http://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 outcome

- Synthesise experimental results and information from the scientific literature to prepare a scientific report

Assessment task

- Research Report

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

- Define evolution and describe its main mechanisms
- Define the the major evolutionary transitions of organisms on earth
- Synthesise experimental results and information from the scientific literature to prepare a scientific report

Discipline Specific Knowledge and Skills

Our graduates will take with them the intellectual development, depth and breadth of knowledge, scholarly understanding, and specific subject content in their chosen fields to make them competent and confident in their subject or profession. They will be able to demonstrate, where relevant, professional technical competence and meet professional standards. They will be able to articulate the structure of knowledge of their discipline, be able to adapt discipline-specific knowledge to novel situations, and be able to contribute from their discipline to inter-disciplinary solutions to problems.

This graduate capability is supported by:

Learning outcomes

- Define evolution and describe its main mechanisms
- Define the the major evolutionary transitions of organisms on earth
- Differentiate the main groups of organisms
- Interpret the evolutionary relationships between groups of organisms
- Contrast major ecological processes that drive evolution
- Describe global and continental biogeographic patterns

Assessment tasks

- Weekly activities
- Mid-semester test
- Research 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

- Define evolution and describe its main mechanisms
- Define the the major evolutionary transitions of organisms on earth
- Interpret the evolutionary relationships between groups of organisms
- Describe global and continental biogeographic patterns

Assessment tasks

- Mid-semester test
- Research 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:

Assessment tasks

- Weekly activities
- 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

- Define evolution and describe its main mechanisms
- Define the the major evolutionary transitions of organisms on earth
- Synthesise experimental results and information from the scientific literature to prepare a scientific report

Assessment tasks

- Mid-semester test
- Research 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

- Contrast major ecological processes that drive evolution
- Describe global and continental biogeographic patterns

Changes from Previous Offering

BIOL114 in 2016 has been moderated from previous offerings to link strongly with the newly established BIOL116 - Biology in Action.