



# BIOL3450

## Reef Evolution and Dynamics

Session 1, Infrequent attendance, North Ryde 2020

*Department of Biological Sciences*

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## General Information

Unit convenor and teaching staff

Unit Convenor

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Credit points

10

Prerequisites

150cp including ((BIOL2520 or BIOL263) or (40cp from BIOL units and 40cp from either ENV5 or GEOS units)) and (STAT1170 or STAT170 or FOSE1015)

Corequisites

Co-badged status

Unit description

Modern coral reefs are important and dynamic systems arising from physical, biological, ecological and geological processes. This unit is a hands on introduction to modern coral reefs. We use a variety of quantitative and qualitative methods to explore a diverse range of multidisciplinary topics including: reef formation and structure; reef zonation; carbonate sedimentology; biodiversity; ecology; taxonomy; taphonomy; symbiosis; bioturbation and bio-erosion; human impacts on reef systems; and the evolution and importance of reef formation in the geological record. Integrating ecological and geological timescales is a particular focus of the unit - students learn about the changes associated with the evolution of reefs through geological time. The study of ancient reefs provides a counterpoint and analogy to the modern reef setting studied in the field. The unit involves a compulsory two day on-campus session and an seven day field excursion to Heron Island Research Station, Capricorn-Bunker Group, Great Barrier Reef (separate excursion fee applies). Students are encouraged, but not required, to take BIOL2610 or second year statistics.

## 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:

**ULO1:** Explain the interactions between biological, physical, and historical processes that produce modern reef environments.

**ULO2:** Explain and distinguish the key mechanisms and characteristics governing the preservation of living communities as fossil assemblages.

**ULO3:** Reconstruct past communities using fossil assemblages. Evaluate the assumptions and uncertainties inherent in these reconstructions.

**ULO4:** Apply and critique field methods in the context of different research goals.

**ULO5:** Design and implement an independent scientific project, analyze and evaluate the results in the context of the relevant scientific literature, and communicate those results to a scientific audience.

## Assessment Tasks

### Coronavirus (COVID-19) Update

Assessment details are no longer provided here as a result of changes due to the Coronavirus (COVID-19) pandemic.

Students should consult [iLearn](#) for revised unit information.

[Find out more about the Coronavirus \(COVID-19\) and potential impacts on staff and students](#)

## General Assessment Information

### Attendance:

**Attendance at both days of the on campus session and for the entirety to the field trip is compulsory.** Students who fail to attend both days of the on campus session will need to withdraw from the unit prior to the census date to avoid fees.

### Completion:

**Students must complete and submit all assessable tasks AND receive a final mark of >50% to pass this subject.** Extensions and penalties:

## Due dates, extensions and penalties:

The deadlines for assignments are not negotiable. The penalty for late submission is a deduction of 10% of the mark allocated per day that any work is submitted late. Only a medical certificate or a letter with appropriate supporting documents outlining other serious, extenuating circumstances can be used to submit an assignment after the due date without penalty. All applications for special consideration or extension must be sought before the due date unless this is absolutely impossible. All applications for extensions of deadlines must be submitted to the unit convenor via ask@mq.

## Plagiarism:

While data collection and analyses will often be conducted in groups, students are required to use their own words in all written assignments. All collaborative aspects of work must be acknowledged as indicated in the assignment instructions. 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.

## Delivery and Resources

### Coronavirus (COVID-19) Update

Any references to on-campus delivery below may no longer be relevant due to COVID-19.

Please check here for updated delivery information: [https://ask.mq.edu.au/account/pub/display/unit\\_status](https://ask.mq.edu.au/account/pub/display/unit_status)

## iLearn:

Access to iLearn is required to complete assessment tasks and to access unit resources.

## On campus session:

Attendance at both days of the on campus session and for the entirety to the field trip is compulsory. **Students who fail to attend the on campus session or to pay the required fee by the due date will forfeit their place on the field trip and in the unit.** Any individual anticipating difficulties meeting a due date must discuss and make arrangements with the unit convenor well in advance of the due date.

## Field trip:

**The field trip fee is \$890 and must be paid to the University Cashier one week prior to the census date (see iLearn).** See iLearn for the payment form. Any student who is unable to pay the field trip by this date should contact the unit convenor as extensions are possible.

**Students are responsible for their own travel arrangements (and associated costs) to and from the Gladstone Marina.** See Unit schedule section for field trip dates. See: <http://www.heronisland.com/Getting-Here.aspx> for additional information.

During the field trip students are expected to act in an exemplary manner and follow staff instructions. This is especially true of requirements imposed by the Heron Island Research Station, Macquarie University Risk and Assurance, Animal Ethics, and/or the Great Barrier Reef Marine Park Authority. Any student who fails to behave as expected will be asked to leave the field trip at their own expense and will be unable to satisfactorily complete the unit.

## Food:

We will be preparing and eating communal meals. Students must inform the unit convener of any dietary restrictions, food allergies or potential medical issues at (or before) the on campus session so that arrangements can be made (see iLearn). Contact the unit convener with any concern regarding field trip logistics.

## Swimming and snorkelling:

Staff will make every effort to provide snorkelling opportunities, but snorkelling activities are dependant on weather conditions and participation is dependant student swimming capabilities. The Macquarie University Snorkelling Manual and the University of Queensland Dive Manual (pdf) will govern our snorkelling activities. During the on campus session students will have the opportunity to undertake the Macquarie University Research Snorkeler swim and rescue assessment (see MQ Snorkelling Operations Manual). Students are not required to pass the assessment to go snorkelling, but the results of the swim assessment are used by the staff as part of our risk assessment process and to establish safe operational limits.

Students are encouraged to practice swimming prior to the on campus session and swim lessons are available through the Macquarie University Swim Program. Students who are concerned about their swimming capabilities should discuss it with the unit convener as early as possible.

Additional information on what to bring is provided at the on campus session and via iLearn, but appropriate field attire is required and students are encouraged to bring snorkeling equipment.

## Mental & Physical health:

The field trip is physically strenuous with long hours in the field. As students are removed from their normal support structures the trip can be stressful for some students. Student anticipating physical or mental stress, or for those who have experienced these previously - talk to your physician, campus wellbeing (<https://students.mq.edu.au/support/wellbeing>) and/or the unit convenor to help ensure that you are set up for success. As resources are very limited on island, planning needs to start prior to the end of the on campus session.

## Special Considerations:

Any student with special considerations must inform unit staff at (or before) the on campus session so that arrangements can be made. It is general not possible to arrange any special considerations after that date, but if you have concerns contact the unit convener as early as possible. Due to the remote nature of the field trip, not all special considerations are possible, but the earlier we can start planning the more likely it is that we can arrange something.

## Unit Schedule

### Coronavirus (COVID-19) Update

The unit schedule/topics and any references to on-campus delivery below may no longer be relevant due to COVID-19. Please consult [iLearn](#) for latest details, and check here for updated delivery information: [https://ask.mq.edu.au/account/pub/display/unit\\_status](https://ask.mq.edu.au/account/pub/display/unit_status)

**[[ This schedule is correct at time of publication, but check iLearn for the most current information ]]**

### Weeks 1 - 5:

- Complete tasks posted on iLearn. Don't forget to complete the quizzes. They are designed to make sure that you have all the background that will be assumed once you get to Heron! Prepare for the on campus session.
- The two day compulsory on campus session is the second weekend of the session. Consult iLearn for specifics.
  - 2020: March 7th in 11 Wally's Walk (E5A) rooms 210 & 220 from 9:00 - 17:00.
  - 2020: March 8th TBD [The Sydney Institute of Marine Science, Chowder Bay or MQ campus]) from 9:00 - 17:00.
- The field trip fee is due one week prior to the census date. Pay the university cashier and email a copy of the tax invoice to the unit convenor.
- Begin thinking about potential topics for your independent project. If you want to do a project requiring special equipment it must be sorted out by the census date - please discuss your needs with the course convener with plenty of time.

### Week 6:

- Prepare and pack for Heron.

### Heron Island Field trip:

- Typically the fieldtrip is first week of mid semester break. ◦ 2019: April 13th - 20th
- A detailed schedule will be provided via iLearn.
- See the Delivery & Resources / fieldtrip section of this unit guide and iLearn for more information.

- The fieldtrip is compulsory.
- You are expected to be at the Gladstone Marina to catch the Ferry departing at ~9:00 on April 12th (yes, Easter Sunday).
- You will return on the Ferry arriving at ~16:00 on April 19th.

#### **Weeks 7 & 8:**

- Write up independent project report (see iLearn and additional instructions provided).

#### **Weeks 9 & 10:**

- Complete peer review of project reports supplied to you (see iLearn and additional instructions provided).

#### **Weeks 11 & 12:**

- Revise your project report based on peer review (see iLearn and additional instructions provided).

## **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.*)

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 published on platform other than [eStudent](#), (eg. iLearn, Coursera etc.) 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> or if you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto:globalmba.support@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 help you improve your marks and take control of your study.

- [Getting help with your assignment](#)
- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module](#)

The Library provides online and face to face support to help you find and use relevant information resources.

- [Subject and Research Guides](#)
- [Ask a Librarian](#)

## 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>

If you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto:globalmba.support@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.

## Changes since First Published

| Date       | Description   |
|------------|---|
| 10/02/2020 | Added required content on penalties for late submission of assignments. |