



# ENVS8403

## Science in Environmental Management

Session 1, In person-scheduled-weekday, North Ryde 2022

*School of Natural Sciences*

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#### **Disclaimer**

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## General Information

### Unit convenor and teaching staff

Convenor

Dr Kerrie Tomkins

[kerrie.tomkins@mq.edu.au](mailto:kerrie.tomkins@mq.edu.au)

Contact via by email

### Academic Staff

Dr Tim Ralph

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Contact via by email

Tim Ralph

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### Credit points

10

### Prerequisites

Admission to MEnv or MEnvEd or MEnvMgt or MEnvStud or MEnvPlan or MPlan or MSusDev or MSc or MWldMgt or MMarScMgt or GradCertEnv or GradDipEnv or GradCertSusDev or GradDipSusDev or MConsBiol or MEngEnvSafetyEng or MScInnovationEnvSc

### Corequisites

### Co-badged status

### Unit description

The aim of this unit is to provide an understanding of how environmental science is used to inform environmental management and decision making. The unit introduces students to the core principles of scientific method and practice, as well as some of the major physical, chemical and ecological processes that effect and control natural and anthropogenic environmental impacts. Core skills in field data collection, laboratory analysis and scientific writing are developed through a weekend field trip, and weekly lectures and workshops. Students gain experience in evaluating real-world environmental management problems and developing effective solutions and recommendations from the viewpoint of science.

## 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:** Demonstrate a sound understanding of the principles of scientific method and practice.

**ULO2:** Critically review peer-reviewed scientific literature relating to environmental management.

**ULO3:** Collect and analyse scientific data to evaluate real-world environmental management problems.

**ULO4:** Research and synthesise different forms of scientific data and other information on an environmental topic, and present this in written, oral and visual forms.

**ULO5:** Demonstrate proficiency in professional skills acquired through individual research and working in groups.

## General Assessment Information

### Assessment Criteria

Assessment at Macquarie University is standards-based, as outlined in the [Assessment Policy](#). This means that your work will be assessed against clear criteria, and these criteria will be made available when the assessment tasks are released to you on iLearn.

### Submission of Assessments

All assessments must be submitted online through [Turnitin](#) unless otherwise indicated. Links for the submission of each assessment will be available on [iLearn](#).

### Marking of Assessments

Assessments will be marked through Turnitin with marks and feedback provided through GradeMark. Please do not submit your assessments via email or in hard copy.

We aim to mark your assessments within two to three weeks of the submission due date, and before your next assignment is due. We appreciate your patience and will advise you through iLearn when your marks and feedback are available for viewing.

### General Faculty Policy on Assessment Submission Deadlines and Late Submissions

Online quizzes, in-class activities, or scheduled tests and exam must be undertaken at the time indicated in the unit guide. Should these activities be missed due to illness or misadventure, students may apply for Special Consideration.

All other assessments must be submitted by 5:00 pm on their due date. Should these assessments be missed due to illness or misadventure, students should apply for Special Consideration.

Assessments not submitted by the due date will receive a mark of zero unless late submissions

are specifically allowed as indicated in the unit guide or on iLearn.

If late submissions are permitted as indicated in the unit guide or on iLearn a consistent penalty will be applied for late submissions as follows:

A 12-hour grace period will be given after which the following deductions will be applied to the awarded assessment mark: 12 to 24 hours late = 10% deduction; for each day thereafter, an additional 10% per day or part thereof will be applied until five days beyond the due date. After this time, a mark of zero (0) will be given. For example, an assessment worth 20% is due 5 pm on 1 January. Student A submits the assessment at 1 pm, 3 January. The assessment received a mark of 15/20. A 20% deduction is then applied to the mark of 15, resulting in the loss of three (3) marks. Student A is then awarded a final mark of 12/20.

### Assessments where Late Submissions will be Accepted

In this unit, late submissions will accepted as follows:

- Literature Review - YES
- Field Trip Report - YES
- Abstract - YES
- Presentation - NO, unless Special Consideration is granted

### Special Consideration

To obtain an extension for an assessment task, you will need to follow the formal process as outlined in the [Special Consideration Policy](#), and you must provide appropriate supporting documentation (e.g. medical certificate - see advice for [Special Consideration](#) requests). The final decision regarding the granting of an extension lies with the unit convenor. However, if you let us know of problems in advance or as soon as possible (not after the event), we are much more likely to be sympathetic and flexible.

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#">Literature review</a>	30%	No	Fri 18 March, 5 pm
<a href="#">Field trip report</a>	30%	No	Fri 22 April, 5 pm
<a href="#">Abstract</a>	10%	No	Wed 25 May, 5 pm
<a href="#">Presentation</a>	30%	No	Wed 25 May, 5 pm

### Literature review

Assessment Type <sup>1</sup>: Literature review

Indicative Time on Task <sup>2</sup>: 25 hours

Due: **Fri 18 March, 5 pm**

Weighting: **30%**

Literature review on the future challenges for environmental management

On successful completion you will be able to:

- Demonstrate a sound understanding of the principles of scientific method and practice.
- Critically review peer-reviewed scientific literature relating to environmental management.
- Demonstrate proficiency in professional skills acquired through individual research and working in groups.

## Field trip report

Assessment Type <sup>1</sup>: Report

Indicative Time on Task <sup>2</sup>: 25 hours

Due: **Fri 22 April, 5 pm**

Weighting: **30%**

Report based on observations and data collected in the field and in the laboratory

On successful completion you will be able to:

- Demonstrate a sound understanding of the principles of scientific method and practice.
- Collect and analyse scientific data to evaluate real-world environmental management problems.
- Demonstrate proficiency in professional skills acquired through individual research and working in groups.

## Abstract

Assessment Type <sup>1</sup>: Professional writing

Indicative Time on Task <sup>2</sup>: 2 hours

Due: **Wed 25 May, 5 pm**

Weighting: **10%**

Research project abstract

On successful completion you will be able to:

- Demonstrate a sound understanding of the principles of scientific method and practice.
- Research and synthesise different forms of scientific data and other information on an environmental topic, and present this in written, oral and visual forms.
- Demonstrate proficiency in professional skills acquired through individual research and working in groups.

## Presentation

Assessment Type <sup>1</sup>: Presentation

Indicative Time on Task <sup>2</sup>: 25 hours

Due: **Wed 25 May, 5 pm**

Weighting: **30%**

Oral presentation and participation in the research project

On successful completion you will be able to:

- Demonstrate a sound understanding of the principles of scientific method and practice.
- Research and synthesise different forms of scientific data and other information on an environmental topic, and present this in written, oral and visual forms.
- Demonstrate proficiency in professional skills acquired through individual research and working in groups.

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<sup>1</sup> If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- the [Writing Centre](#) for academic skills support.

<sup>2</sup> Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

## Delivery and Resources

### IMPORTANT: COVID Information and on-campus classes

On-campus teaching continues to be scheduled for Session 1, 2022. Masks are **compulsory** for all classes in indoor spaces and social distancing will be implemented wherever possible. Students will also be required to sanitise surfaces before and after use.

Students are requested to minimise the risk of spreading COVID to themselves and others in accordance with the university and NSW Health guidelines: <https://www.mq.edu.au/about/corona-virus-faqs> and <https://www.nsw.gov.au/covid-19/stay-safe>.

Any further requirements or changes to units in relation to COVID will be communicated to students via iLearn.

### IMPORTANT: Off-shore students

Off-shore students **must** email the convenor as soon as possible to discuss study options. This unit includes practical learning in the field and lab, however, we can provide online alternatives for those students who are stuck off-shore as an exception.

### Class schedule

The class timetable can be found through the [Timetable](#) portal. This year prac classes have been scheduled for **6-9 pm on Wednesday evenings in the new building 01CC, room 101 ALS**. There is also a **weekend field trip on 19-20 March**, which is compulsory. A detailed schedule with the weekly topics, assessment due dates, etc. will be provided on [iLearn](#).

### **Learning activities**

The unit is comprised of 12 weeks of prac classes, including a field trip to the Blue Mountains. The format of the prac classes varies and includes lectures, writing skills workshops, lab skills workshops, group work and student presentations. As a result, it is essential that you attend all classes and the field trip.

In addition to the scheduled classes, you are also required to spend time doing your own independent reading and research, with most of this time going towards completing the assessments. As a guide, you should aim to spend approximately 100 hours of your own time on the unit over the semester, in addition to the scheduled classes and field trip.

### **Field trip**

The unit includes a weekend field trip to Katoomba in the Blue Mountains, which is home to the famous Three Sisters and Blue Mountains World Heritage area. Katoomba is the largest centre in the Blue Mountains, with a population of ~8000 people. Each year, the region receives over 4 million visitors with most of these stopping at Katoomba. As a result, the area is an ideal place to learn about the natural environment and environmental management. You will visit different sites to observe environmental management issues, record data and collect samples for subsequent analysis in the lab.

Note: **The cost of the field trip is not covered by the unit fees.** You will need to pay for transport to/from and around Katoomba either by driving or by catching the train. Students have the option of staying in Katoomba on the Friday and/or Saturday night or travelling up/back each day. There are several options for accommodation in Katoomba - the cheapest and best option is to stay at the Katoomba YHA: <https://www.yha.com.au/hostels/nsw/blue-mountains/katoomba/#detail> Field trip logistics will be discussed during the first week of class.

### **Requirements to Complete this Unit Satisfactorily**

- You must submit all assignments and gain a final mark of at least 50% to complete this unit satisfactorily.
- You are required to attend all of the scheduled classes, including the field trip.  
Permission to be excused will only be granted in exceptional circumstances.

### **Technologies Used and Required**

You will need to **bring a computer to class each week**. We will use basic programs such as Word and Excel. You will also need to have access to a computer to use the university systems (e.g. iLearn, library) and complete the assessment tasks. Submissions of the assessment tasks will be arranged through iLearn using Turnitin.

### **Field and Lab Work, Health and Safety**

To minimise the risk of WHS accidents, you must wear appropriate clothing and footwear, and bring adequate water and food for each day on the field trip. You must also wear closed shoes when working in the lab.

## **Background Reading**

There is no single text for this course. Background reading can be found in the following:

- O’Riordan, T (1999) Environmental Science for Environmental Management, Taylor and Francis Ltd
- Aplin, G (2002), Australians and their Environment: An Introduction to Environmental Studies, Oxford University Press
- Arms K (1994). Environmental Science, Saunders College Publishing, Fort Worth, 2nd edition.
- Beckmann R (1994). Environmental Science, Australian Academy of Science, Canberra.
- Enger ED and Smith BF (2006). Environmental Science: a study of interrelationships, McGraw Hill Publish.
- Huxham M and Sumner D (2000). Science and Environmental Decision Making, Pearson Education.
- Jacobson M.C. (2000). Earth System Science: From Biogeochemical Cycles to Global Change. Academic Press, London. QH344.E17/2000
- Munasinghe M and Swart R (2005). Primer on Climate Change and Sustainable Development, Cambridge University Press.

## **Policies and Procedures**

Macquarie University policies and procedures are accessible from [Policy Central \(https://policies.mq.edu.au\)](https://policies.mq.edu.au). 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](#)
- [Assessment Procedure](#)
- [Complaints Resolution Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#)

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



To find other policies relating to Teaching and Learning, visit [Policy Central \(https://policies.mq.edu.au\)](https://policies.mq.edu.au) and use the [search tool](#).

## Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/admin/other-resources/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](http://ask.mq.edu.au) or if you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto:globalmba.support@mq.edu.au)

## Academic Integrity

At Macquarie, we believe [academic integrity](#) – honesty, respect, trust, responsibility, fairness and courage – is at the core of learning, teaching and research. We recognise that meeting the expectations required to complete your assessments can be challenging. So, we offer you a range of resources and services to help you reach your potential, including free [online writing and maths support](#), [academic skills development](#) and [wellbeing consultations](#).

## Student Support

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

## The Writing Centre

[The Writing Centre](#) provides resources to develop your English language proficiency, academic writing, and communication skills.

- [Workshops](#)
- [Chat with a WriteWISE peer writing leader](#)
- [Access StudyWISE](#)
- [Upload an assignment to Studiosity](#)
- [Complete the 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

Macquarie University offers a range of [Student Support Services](#) including:

- [IT Support](#)
- [Accessibility and disability support](#) with study
- Mental health [support](#)
- [Safety support](#) to respond to bullying, harassment, sexual harassment and sexual assault
- [Social support including information about finances, tenancy and legal issues](#)

## Student Enquiries

Got a question? Ask us via [AskMQ](#), or contact [Service Connect](#).

## 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.