



ENVS8403

Science in Environmental Management

Session 1, Weekday attendance, North Ryde 2021

Archive (Pre-2022) - Department of Earth and Environmental Sciences

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Disclaimer

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Notice

As part of [Phase 3 of our return to campus plan](#), most units will now run tutorials, seminars and other small group activities on campus, and most will keep an online version available to those students unable to return or those who choose to continue their studies online.

To check the availability of face-to-face activities for your unit, please go to [timetable viewer](#). To check detailed information on unit assessments visit your unit's iLearn space or consult your unit convenor.

General Information

Unit convenor and teaching staff

Kerrie Tomkins

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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.

Penalties for Late Assessments

The penalty for late submission of assessments in this unit is **ten percent (10 %) of the assessment value per day**, calculated from the due time and date. This means that if the assessment is worth a total of 30 marks (or 30 % of the unit) you will lose 3 marks for each day late. This is a hefty penalty designed to make you aware of the importance of organising yourself around assessment due dates. The penalty will be applied over weekdays and weekends unless you have been granted an extension.

Extensions for Assessments

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 and/or a late penalty 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 |
|-----------------------------------|-----------|--------|--------------|
| Literature review | 30% | No | Fri 19 March |
| Field trip report | 30% | No | Sun 25 April |
| Abstract | 10% | No | Wed 26 May |
| Presentation | 30% | No | Wed 26 May |

Literature review

Assessment Type ¹: Literature review

Indicative Time on Task ²: 25 hours

Due: **Fri 19 March**

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 ¹: Report

Indicative Time on Task ²: 25 hours

Due: **Sun 25 April**

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 ¹: Professional writing

Indicative Time on Task ²: 2 hours

Due: **Wed 26 May**

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 ¹: Presentation

Indicative Time on Task ²: 25 hours

Due: **Wed 26 May**

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.

¹ 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.

² 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

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 20-21 March**, which is compulsory. A detailed schedule with lecture and practical topics, assessment due dates, etc. will be provided on [iLearn](#).

Learning activities

The unit is comprised of 12 weeks of prac classes, plus the field trip to the Blue Mountains. The format of the prac classes varies and includes lectures, writing skills workshops, lab skills workshops (location to be advised), group work and student presentations. As a result, it is essential that you attend all classes and the field trip. This unit is not able to be offered externally.

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, such as unavoidable clashes with other units. Attendance may be taken into account when determining final grades for the unit where marks are on the border between one grade and the next.

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](#)

- [Grade Appeal Policy](#)
- [Complaint Management 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 or if you are a Global MBA student contact 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

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.