ENVS8403

Science in Environmental Management

Session 1, In person-scheduled-weekday, North Ryde 2025

School of Natural Sciences

Contents

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General Information

Unit convenor and teaching staff
Convenor
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Credit points
10

Prerequisites
Admission to MConsBiol or MEnv

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. Note that there may be accommodation costs if students choose to stay overnight on the fieldtrip.

Learning in this unit enhances student understanding of global challenges identified by the United Nations Sustainable Development Goals (UNSDGs) Sustainable Cities and Communities; Climate Action; Life on Land

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

Requirements to Pass this Unit

To pass this unit you must achieve a total mark equal to or greater than 50%.

We strongly encourage all students to actively participate in all learning activities. Regular engagement is crucial for your success in this unit, as these activities provide opportunities to deepen your understanding of the material, collaborate with peers, and receive valuable feedback from instructors, to assist in completing the unit assessments. Your active participation not only enhances your own learning experience but also contributes to a vibrant and dynamic learning environment for everyone.

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 (e.g. in a rubric) 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 provided on iLearn. Please do not submit your assessments via email or in hard copy.

Marking of Assessments

Written assessments will be marked through Turnitin with marks and feedback provided through GradeMark. All assessment grades will be available in Gradebook on iLearn.

We aim to return your assessment grades and feedback within three weeks of the assessment due date and before the next assignment is due. We appreciate your patience and will advise you through iLearn when your marks and feedback are available for viewing.

Late Assessment Submission Penalty

Unless a Special Consideration request has been submitted and approved, a 5% penalty (of the total possible mark of the task) will be applied for each day a written report or presentation assessment is not submitted, up until the 7th day (including weekends). After the 7th day, a grade of '0' will be awarded even if the assessment is submitted. The submission time for all uploaded assessments is 11:55 pm. A 1-hour grace period will be provided to students who experience a technical concern.

For any late submission of time-sensitive tasks, such as scheduled tests/exams, performance assessments/presentations, and/or scheduled practical assessments/labs, please apply for Special Consideration.

Assessments where Late Submissions will be accepted:

- Literature Review - YES, Standard Late Penalty applies
- Field Trip Report - YES, Standard Late Penalty applies
- Abstract - YES, Standard Late Penalty applies
- Presentation - NO, unless Special Consideration is Granted

Special Consideration

The Special Consideration Policy aims to support students who have been impacted by short-term circumstances or events that are serious, unavoidable and significantly disruptive, and which may affect their performance in assessment. If you experience circumstances or events that affect your ability to complete the assessments in this unit on time, please inform the convenor and submit a Special Consideration request through https://connect.mq.edu.au.

Assessment Tasks

Name	Weighting	Hurdle	Due
Literature review	20%	No	21/03/2025
Field trip report	40%	No	25/04/2025
Vodcast presentation	30%	No	28/05/2025
Abstract	10%	No	28/05/2025

Literature review

Assessment Type [1]: Literature review
Indicative Time on Task [2]: 20 hours
Due: **21/03/2025**
Weighting: **20%**

Review of the literature on an environmental management topic

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]: 40 hours
Due: **25/04/2025**
Weighting: **40%**

Consultancy-style 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.

Vodcast presentation

Assessment Type [1]: Presentation
Indicative Time on Task [2]: 25 hours
Due: **28/05/2025**
Weighting: **30%**

Vodcast presentation of the key findings from the research project, and participation in the 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.

Abstract

Assessment Type [1]: Professional writing
Indicative Time on Task [2]: 5 hours
Due: **28/05/2025**
Weighting: **10%**

Abstract describing the methods, results and conclusions from 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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[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

Week 1 classes

The practicals for this unit will commence in Week 1.

Methods of Communication

We will communicate with you via your university email or through announcements posted

on iLearn.

Students should make use of iLearn to access learning and teaching materials, submit assessments, stay in touch with the unit, contact lecturers, and discuss issues and concepts with others in the class.

For any general questions about the unit, please post these in the Discussion Forum. For private matters, please send a Private message to the Unit Contact. The links for these are in the Communications folder on the ENVS8403 iLearn page.

Class schedule

Students should use Class Finder to see when and where classes are being held:

- Class Finder web page link: https://students.mq.edu.au/study/enrolling/create-timetable

This year, the ENVS8403 prac classes have been scheduled for **9 am -12 noon on Wednesdays in Building 01 Central Courtyard (01CC), room 205**. There is also a **weekend field trip on 22-23 March**. A detailed schedule with the weekly topics and assessment due dates will be provided on the ENVS8403 iLearn site.

Note: all of the pracs are delivered face to face and **will NOT be recorded**.

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, data and communication skills workshops, group work and student presentations. As a result, it is essential that you attend all of 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. This requires good planning on your part to ensure that you meet the assessment due dates.

Field trip

This 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. We 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 your own transport to/from and around Katoomba each day 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 and 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/ Field trip logistics will be discussed during the first week of class.

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 a computer to use the university systems (e.g. iLearn, library) and complete the assessment tasks. Submissions of the assessment tasks will be 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.

Prior to the field trip, you will need to sign up to Field Friendly (via iLearn) so that you are covered by the university insurance during the trip. This sign-up is compulsory and if you haven't signed up by the closing date, you will not be permitted to attend.

Background Reading

There is no single textbook 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). 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). 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) 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 connect.mq.edu.au or if you are a Global MBA student contact 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/

Academic Success

Academic Success 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 Advocacy provides independent advice on MQ policies, procedures, and processes

Student Enquiries

Got a question? Ask us via the Service Connect Portal, 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/.

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 from Previous Offering

We value student feedback to be able to continually improve the way we offer our units. As such we encourage students to provide constructive feedback via student surveys, to the teaching staff directly, or via the FSE Student Experience & Feedback link in the iLearn page

Unit information based on version 2025.03 of the Handbook