ENVS8403

Science in Environmental Management

Session 1, In person-scheduled-weekday, North Ryde 2023

School of Natural Sciences

Contents

General Information

Unit convenor and teaching staff
Convenor
Dr Kerrie Tomkins
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Academic Staff
Dr 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

Requirements to Pass this Unit

To pass this unit you must:

- Attempt all assessments, and
- Achieve a total mark equal to or greater than 50 %.

To do this, you are required to attend all of the scheduled classes, including the field trip.

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 via rubrics 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.

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 ask.mq.edu.au.

Assessment Tasks

Name	Weighting	Hurdle	Due
Literature review	30%	No	Fri 17 March, 11:55 pm
Field trip report	30%	No	Fri 21 April, 11:55 pm
Abstract	10%	No	Wed 24 May, 11:55 pm
Presentation	30%	No	Wed 24 May, 5 pm

Literature review

Assessment Type [1]: Literature review
Indicative Time on Task [2]: 25 hours
Due: **Fri 17 March, 11:55 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 [1]: Report
Indicative Time on Task [2]: 25 hours
Due: **Fri 21 April, 11:55 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 [1]: Professional writing
Indicative Time on Task [2]: 2 hours
Due: **Wed 24 May, 11:55 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 [1]: Presentation
Indicative Time on Task [2]: 25 hours
Due: **Wed 24 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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[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

Methods of Communication

We will communicate with you via your university email or through announcements on iLearn.

All general queries should be placed on the iLearn discussion board. For personal matters, please email the convenor from your university email address.

COVID Information

For the latest information on the University's response to COVID-19, please refer to the Coronavirus infection page on the Macquarie website: https://www.mq.edu.au/about/coronavirus-faqs. Remember to check this page regularly in case the information and requirements change during semester. If there are any changes to this unit in relation to COVID, these will be communicated via iLearn.

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 Building 01 Central Courtyard (01CC), room 201 ALS**. There is also a **weekend field trip on 18-19 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, 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.

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. 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 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). 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 ask.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/

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

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/.

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.