



ENVS3238

Environmental Quality and Assessment

Session 2, In person-scheduled-weekday, North Ryde 2022

School of Natural Sciences

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General Information

Unit convenor and teaching staff

Convenor, Lecturer, Tutor

Damian Gore

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Contact via Email

12WW 4.25

By appointment

Credit points

10

Prerequisites

(130cp at 1000 level or above) including (ENVE266 or ENV5266 or ENV52266 or GEOS266)

Corequisites

Co-badged status

Unit description

Understanding and protecting the environment are key goals for environmental scientists and managers. This unit integrates the knowledge students have gained during their studies, and develops critical professional skills in the assessment of environmental quality and the application of environmental protection tools and processes. This unit assesses environmental health using current practice qualitative and quantitative methods for the measurement of soils, sediments, waters and biota. Students undertake classroom, field and laboratory studies which provide practical experience and develop their knowledge and assessment of environmental impacts, rehabilitation and management. A field trip in the first week of the mid session break gives students practical experience of sites such as legacy mines. This unit prepares graduates for employment in environmental consulting and local, state and federal government workplaces. Students will also prepare material to assist with their transition to the workplace.

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: identify knowledge gaps and develop plans for contaminated site investigation, to

develop professional skills.

ULO2: describe analytical methods and apply quality assurance/quality control programs for environmental analyses, to ensure the accuracy of sampling and analytical programs.

ULO3: collate multiple lines of evidence and apply regulatory frameworks for environmental decision making, in order to create professional-level studies.

ULO4: create remediation action plans, in order to plan to remediate contaminated environments.

ULO5: convey a personal professional profile via portfolio and written communication skills, in order to develop the ability to convey information concisely and accurately.

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: Links for the submission of the written assignments will be available on iLearn. Do not submit your written assignments via email or in hard copy without prior arrangement. **Task 1:** The CV component must be submitted online through Turnitin, and the LinkedIn component must be linked to the unit convenor via the LinkedIn software. **Task 2:** Your final examination will be administered on the fieldtrip (weather permitting). **Task 3:** The major report must be submitted online through Turnitin. Due dates for all assessment tasks are elsewhere in the unit schedule. If you have commitments that will significantly impact your study during the session then you must plan for this in advance as part of an effective individual study plan.

Marking of Assessments: Your written assignments will be marked through Turnitin and feedback will be noted on the assignments. Your assignment grade will be returned using the Grades Report on iLearn. We aim to return your assignments with feedback within 2-3 weeks of the date that you submit your assignment. We appreciate your patience and will advise you through iLearn when your marked assignments and feedback are available for viewing.

Late Assessment Submission Penalty: From 1 July 2022, Students enrolled in Session based units with written assessments will have the following university standard late penalty applied. Please see <https://students.mq.edu.au/study/assessment-exams/assessments> for more information. Unless a Special Consideration request has been submitted and approved, a 5 % penalty (of the total possible mark) will be applied each day a written 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. Submission time for all written assessments is 2355 h. A 1-hour grace period is 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, students need to submit an application for Special Consideration.

Assessments where Late Submissions will be accepted: In this unit, late submissions will

accepted as follows: Assessments 1, 3 – YES, Standard Late Penalty applies · Assessment 2 (field examination) - NO, unless Special Consideration is Granted.

Assessment Tasks

Name	Weighting	Hurdle	Due
<u>Professional portfolio</u>	20%	No	10 Aug
<u>In-Class exam</u>	40%	No	On the last day of the field trip
<u>Field and laboratory investigation with Remediation Action Plan</u>	40%	No	26 Oct

Professional portfolio

Assessment Type ¹: Portfolio

Indicative Time on Task ²: 10 hours

Due: **10 Aug**

Weighting: **20%**

Portfolio consisting of a Curriculum Vitae and a LinkedIn profile.

On successful completion you will be able to:

- convey a personal professional profile via portfolio and written communication skills, in order to develop the ability to convey information concisely and accurately.

In-Class exam

Assessment Type ¹: Examination

Indicative Time on Task ²: 28 hours

Due: **On the last day of the field trip**

Weighting: **40%**

Final examination to be undertaken within class time.

On successful completion you will be able to:

- identify knowledge gaps and develop plans for contaminated site investigation, to develop professional skills.

- describe analytical methods and apply quality assurance/quality control programs for environmental analyses, to ensure the accuracy of sampling and analytical programs.
- collate multiple lines of evidence and apply regulatory frameworks for environmental decision making, in order to create professional-level studies.
- create remediation action plans, in order to plan to remediate contaminated environments.

Field and laboratory investigation with Remediation Action Plan

Assessment Type ¹: Plan

Indicative Time on Task ²: 40 hours

Due: **26 Oct**

Weighting: **40%**

Field and laboratory investigation with Remediation Action Plan. Following from the literature review, fieldwork will be conducted and samples taken and analysed. The data will be used to formulate a Remediation Action Plan for the site.

On successful completion you will be able to:

- identify knowledge gaps and develop plans for contaminated site investigation, to develop professional skills.
- describe analytical methods and apply quality assurance/quality control programs for environmental analyses, to ensure the accuracy of sampling and analytical programs.
- collate multiple lines of evidence and apply regulatory frameworks for environmental decision making, in order to create professional-level studies.
- create remediation action plans, in order to plan to remediate contaminated environments.
- convey a personal professional profile via portfolio and written communication skills, in order to develop the ability to convey information concisely and accurately.

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

Required and Recommended Texts and/or Materials: The freely-available textbook set for this unit is; Lottermoser, B.G. 2010. Mine Wastes. Characterization, Treatment and Environmental Impacts. 3rd edition. Springer, Heidelberg, 400 pp. Other recommended readings for each week will be noted on the iLearn site.

Technology Used and Required: This unit will use iLearn and associated technology. See the Instructions on how to log in to iLearn and the iLearn quick guides for students which will help;

- Getting started - Find out how to navigate and familiarise yourself with the iLearn environment,
- Activities - Learn how to effectively complete the activities required of you in iLearn,
- Assessments and Gradebook - Find out how to submit assessments and view your grades using iLearn,
- Online study tips,
- Discussion fora - Explore the different types, and features of discussion fora in iLearn Computer-Based Learning.

Essential computer-based components of this unit include recorded lectures, practical exercises (not all weeks - refer to the unit schedule), and online discussion fora for communicating with staff and other students in this unit. If you're unsure of how to connect to the internet or use the computer system, help can be obtained at; <http://students.mq.edu.au/support/>.

Announcements and General Discussion Forum: The "Announcements" and "General Discussion Forum" link on the unit's homepage are used to share unit-wide announcements and discuss important issues related to the unit. You are expected to read every posting to the discussion forum because important administrative and academic information will be posted there - it is your responsibility to stay up to date.

What is Required to Complete This Unit Satisfactorily? You must receive a unit mark of at least 50 % to pass this unit. In order to receive a Pass grade, you should spend around 11 h per week on this unit in weeks 1-7, which includes lectures, practicals, reading and assessment preparation and completion. On top of that, around 50 hours for the field work and 40 hours for the final assessment. However, grades are awarded on a demonstration of your understanding and ability, not on time or effort! Lectures provide the framework with which to focus your study of the subject and they are essential for you to engage with. You should supplement them by reading, especially from the text, but also from current journals, which contain the most up-to-date information. All lecture material is assessable. You should participate in five 2 h practicals, and a 4 h practical, held at times stipulated by the timetable. Each student should complete all practical sessions. Practical sessions contain material to supplement the lectures, or comprise exercises which give you skills to help with your understanding of the unit topics and the workplace. All practical material is assessable. Practical sessions provide greater depth to related lecture materials and will assist learning by encouraging your active participation. Important material for the practical classes may be included on iLearn: check the weekly folders. You should complete the full unit

workload, and you may need to spend extra time on different parts of the unit content. Classroom and practical workload will be spread over the first half of the session, fieldwork in the mid-session break, and a major assessment in the second half of the session. Knowing this will help you manage your time effectively throughout the session and work around your other units and commitments.

In this unit we expect quality in your assignments and a level of knowledge and comprehension of unit content in the assessment tasks. Grades for each assessment task and the unit as a whole will be awarded according to the following general criteria (course rubric);

Aspect	Developing	Functional	Proficient	Advanced
Grades	Has not yet reached the desired standard. A Fail grade would be given.	Has reached basic academic standards. A Pass grade would be awarded.	Has completely reached the standards expected. A Credit would be awarded.	Has gone beyond the expected standard. A grade of Distinction or High Distinction would be awarded.
Concepts	Limited understanding of required concepts and knowledge.	Can accurately reproduce required facts, but has limited depth of understanding of basic concepts.	Exhibits breadth and depth of understanding. Uses terminology accurately in new contexts and transfers ideas to new situations.	Exhibits breadth and depth of understanding of concepts. Can engage in productive critical reflection.
Analysis & Synthesis	Data analysis skills are limited.	Data analysis skills are largely descriptive with limited capacity to combine multiple factors.	Can synthesise data and critique the value and importance of scientific arguments.	Data analysis is sophisticated and is capable of placing examples in context of big ideas, problems and solutions.
Independence	Uses immediately available information without discretion.	Can select useful information. Does not always discriminate between types of sources of information.	Independently selects useful information and can discriminate between types of sources of information.	Independently selects useful information and can critically discriminate between types of sources of information.
Communications	Poor written communication skills (e.g. spelling and grammar). Does not demonstrate an understanding of what is expected in assignment writing and presentation.	Communicates ideas adequately in writing. Adheres to most basic requirements for written work and assignment presentation.	Communicates effectively and clearly in writing. Adheres to all expectations of assignment writing and presentation.	Communicates adeptly in writing. Adheres to all expectations of assignment writing.

LECTURES: will be available on iLearn at the start of the week in which they are scheduled. All lectures will be online and you do not have to "attend" a lecture. However, lectures provide the framework with which to focus your study of the subject and are essential for you to engage with. You should supplement them by reading, from the textbook, and current journals, which contain the most up-to-date information. The iLearn site contains suggested readings, but please don't limit yourself to those. Lectures are available through iLearn <https://ilearn.mq.edu.au/login>.

PRACTICALS: will be held on Wednesdays in Weeks 1, 2, 3, 4, 5 and 7, in rooms stipulated by the timetable, or laboratories or the field as the practicals require. Practical may contain a

mixture of components online, in the classroom, laboratory or field. I'll supply more information on iLearn. Each student must attend all practical sessions. Practicals may contain material to supplement the lectures, or comprise practical exercises to give you skills to help with fieldwork or the workplace. Practicals provide greater depth to related lecture material and will assist learning by encouraging your active participation. The venue of the practical classes varies (see iLearn). Important material for the practical classes is included on iLearn. You must wear appropriate clothes for the laboratory: closed toe shoes where no part of your foot is visible (imagine dropping a rock on your foot - choose the footwear you'd like to be wearing should that happen).

FIELDWORK There is one compulsory mid-session fieldtrip for all students. This fieldwork forms an essential component of this unit. We will conduct assessments and propose remediation plans (if necessary) for contaminated sites outside of the Sydney Basin. For this, we will survey and collect soil and water samples. You will measure the elemental compositions of the soil on site, and I will measure (back at the MQU laboratories) the elemental compositions of the water, and perhaps soil mineralogy. You will then use all of this information – collected by all students, or me – to write your major report. On fieldwork, there are professional standards to adhere to for use of Personal Protective Equipment (PPE) and Personal Protective Clothing (PPC). Everyone should have sturdy footwear - no running shoes or other inadequately protective shoes (you don't need steel capped boots). You will wear hi-vis tops - either your own hi-vis shirts or a vest that I can supply. Your shirts must have a collar and long sleeves. You must wear a hat with a wide brim - no baseball caps. Either shorts or long pants are OK. Gloves will be required according to the task you are conducting (I can supply nitrile gloves). Safety glasses as required by the task you are conducting (I can supply these). In summary, no sleeves, no collar, no hat, no sturdy shoes = no work.

ASSESSMENTS There are three assessments, with percentage weightings as described above.

Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central \(https://policies.s.mq.edu.au\)](https://policies.s.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 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 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.