

ENVL 2007 ENVIRONMENTAL MONITORING AND ASSESSMENT

Credit Points 10

Legacy Code 301408

Coordinator Matthias Boer ([https://directory.westernsydney.edu.au/search/name/Matthias Boer/](https://directory.westernsydney.edu.au/search/name/Matthias%20Boer/))

Description In this unit, you will develop the practical skills and underlying scientific knowledge required to address environmental questions across natural and built environments. Through practicals, workshops, and an independent research project you will learn how to design a monitoring and assessment program to characterise different environment situations, interpret data and propose management solutions to contemporary environmental challenges. The unit will introduce a range of topics, including the application of geographic information systems (GIS), remote sensing methodologies, environmental sensors, the internet of things and citizen science approaches to understand and improve environmental situations, and provides opportunities to research a chosen, real-world topic to assess an aspect of environmental sustainability.

School Science

Discipline Environmental Studies, Not Elsewhere Classified.

Student Contribution Band HECS Band 2 10cp

Check your HECS Band contribution amount via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

Level Undergraduate Level 2 subject

Learning Outcomes

On successful completion of this subject, students should be able to:

1. Explain different concepts and approaches to environmental monitoring and assessment in the context of natural and built environments.
2. Critique monitoring data and environmental reports that utilise a range of environmental indicators including soil, air, water, microbial.
3. Apply different techniques and approaches for environmental monitoring.
4. Evaluate environmental data to assess the current state of the environment and manage risk in the context of environmental sustainability.

Subject Content

1. Why monitor and assess the environment?
2. Key parameters for monitoring and assessment.
3. Framework for designing a monitoring and assessment program, including field sampling considerations, data collection and statistical analysis.
4. Introduction to Geographic Information Systems.
5. Introduction to remote sensing for environmental monitoring and change detection.
6. Field application of sensors, Internet of things and drones for environmental assessment and management.
7. Plant, animal, microbial and soil monitoring.
8. River and catchment monitoring.

9. Air quality monitoring.

10. The role of citizen science/crowd sourcing in environmental monitoring.

11. Selected case studies for environmental impact assessment.

Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Item	Length	Percent	Threshold	Individual/Group Task
Quiz	Four online quizzes (5% each)30 minutes each quiz	20	N	Individual
Report	2000 words maximum	25	N	Individual
Report	2000 words maximum	25	N	Individual
Report	3000 words maximum	20	N	Group
Presentation	10 min.	10	N	Group

Teaching Periods

Autumn Hawkesbury

Composite

Subject Contact Matthias Boer ([https://directory.westernsydney.edu.au/search/name/Matthias Boer/](https://directory.westernsydney.edu.au/search/name/Matthias%20Boer/))

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=ENVL2007_22-AUT_HW_C#subjects)