# EART 3007 LAND DEGRADATION AND CONTAMINATION

**Credit Points** 10

**Legacy Code** 301273

**Coordinator** Jason Reynolds (https://directory.westernsydney.edu.au/search/name/Jason Reynolds/)

**Description** This subject will examine current interdisciplinary topics on land degradation and contamination in both urban, peri-urbanand rural environments. The effects of the various human induced land degradation and contamination processes and pollutants in terrestrial environments will be explored and how impacts can be ameliorated and managed. The focus is on both the science of environmental pollutants and on the remediation strategies currently available. Topics include; basic concepts of soils, study of the processes, common soil pollutants, persistent organic contaminants and pesticides, acidification of soils, quantitative risk assessment, land reclamation, and landfill sites

**School** Science

**Discipline** Soil Science

**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 3 subject

**Restrictions**

Successful completion of 60 credit points

**Assumed Knowledge**

A basic understanding of scientific enquiry including the periodic table, equilibria, and pH. Introductory statistics including mean, standard deviation, and distributions.

## Learning Outcomes

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

1. Detail the interactions between land, human activities and pollutants
2. Evaluate land data to assess degradation and contamination
3. Explain current land degradation and contamination issues and processes
4. Discuss current environmental quality criteria in relation to land management
5. Demonstrateskills used to monitor degradation and contamination on land
6. Synthesise data for reporting to peers and an academic audience

## Subject Content

1.Soil concepts
2.The history of land degradation and contamination in Australia
3.Land degradation due to erosion, salinity, organic matter and fertility decline, soil acidity and alkalinity and other related factors
4.Environmental contaminants and their fate in the environment
5.Pathways for contamination mobility on land surfaces
6.Analytical techniques for measuring contamination and degradation
7.Statistical and modelling approaches to land evaluation and assessment
8.Environmental quality criteria for land evaluation and 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.

| Type | Length | Percent | Threshold | Individual/ Group Task |
|---|---|---|---|---|
| Report | 2,000 words | 40 | N | Individual |
| Presentation | 10 minutes | 20 | N | Individual |
| Quiz | 1 hour | 20 | N | Individual |
| Quiz | 1 hour | 20 | N | Individual |

Prescribed Texts

- Soil and Water Contamination. CRC Press Published 2013 ISBN 9780415893435

Teaching Periods

## Spring (2022)

### Hawkesbury

#### Composite

**Subject Contact** Jason Reynolds (https://directory.westernsydney.edu.au/search/name/Jason Reynolds/)

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=EART3007_22-SPR_HW_C#subjects)

## Spring (2023)

### Hawkesbury

#### Hybrid

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View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=EART3007_23-SPR_HW_3#subjects)