

# NATS 3012 ENVIRONMENTAL FORENSIC INVESTIGATIONS

**Credit Points** 10

**Legacy Code** 300981

**Coordinator** Val Spikmans ([https://directory.westernsydney.edu.au/search/name/Val Spikmans/](https://directory.westernsydney.edu.au/search/name/Val%20Spikmans/))

**Description** This unit examines the forensic processes required to conduct investigations into environmental crime and incidents. The unit extends the student's knowledge and understanding of forensic science concepts to environmental scenarios, including illegal dumping, spills and water pollution incidents. The unit will discuss how scenes are investigated, what methods and techniques are used to analyse environmental samples, and how the results are interpreted and presented in the NSW Land and Environment Court. Factors effecting the collection, analysis and interpretation of evidence, such as weathering, are also discussed, as these are crucial to understand the scenes and to correctly present evidence in court.

**School** Science

**Discipline** Forensic 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/](https://www.westernsydney.edu.au/currentstudents/current_students/fees/)) page.

**Level** Undergraduate Level 3 subject

**Pre-requisite(s)** NATS 1008 AND NATS 2019

**Equivalent Subjects** NATS 2017 - Forensic Analysis of Physical Evidence LGYA 6259 - Forensic Biology

## Learning Outcomes

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

- Determine what is considered evidence in an environmental incident or crime scene.
- Conduct environmental forensic investigations whilst maintaining evidence integrity and continuity.
- Describe the quality management procedures necessary to collect and preserve environmental samples from the site of its recovery through to the laboratory and its presentation in court.
- Explain the concepts of dilution effects, weathering effects and matrix effects and how to take these effects into account when collecting, analysing and interpreting environmental forensic evidence.
- Apply theoretical and practical knowledge of a range of forensic science procedures and the associated equipment to forensically examine a range of evidence from environmental scenes.
- Apply concepts of forensic identification and pattern matching to determine the source of evidence collected from an environmental case.
- Communicate the results correctly in written form using appropriate language style, placing the findings in context of the forensic investigation.
- Explain the appropriate acts, regulations and the expert witness code of conduct as it relates to the presentation of evidence in the NSW Land and Environmental Court as an expert witness.

## Subject Content

- Explanation of what are environmental forensic investigations and the types of cases commonly encountered.
- Theories and principles of conducting environmental forensic investigations, including evidence integrity and continuity and sampling protocols.
- Theoretical and practical knowledge of a range of forensic science procedures and the associated equipment needed to forensically examine a range of evidence related to environmental incidents or crime scenes.
- Issues of dilution effects, weathering effects and matrix effects for the collection, examination and interpretation of evidence.
- Concepts of forensic identification and pattern matching for source determination of evidence collected from environmental crime scenes or incidents.
- The presentation of results in the NSW Land and Environment Court, including the expression of results, appropriate acts and regulations, and the expert witness code of conduct.
- Quality management procedures necessary to preserve evidence from the site of its recovery through to the laboratory and its presentation in court, including NATA accreditation.
- Various case studies relevant to the unit content.

## 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
Case Study	1,000 words (all written during the practicals)	30	N	Group
Report	1,000 - 2,000 words	30	N	Individual
Quiz	1 hour for each assessment	40	N	Individual
Assessment 1	10%			
Assessment 2	15%			
Assessment 3	15%			

Teaching Periods

## Autumn Hawkesbury Day

**Subject Contact** Val Spikmans ([https://directory.westernsydney.edu.au/search/name/Val Spikmans/](https://directory.westernsydney.edu.au/search/name/Val%20Spikmans/))

View timetable ([https://classregistration.westernsydney.edu.au/even/timetable/?subject\\_code=NATS3012\\_22-AUT\\_HW\\_D#subjects](https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=NATS3012_22-AUT_HW_D#subjects))