



Australia's  
Global  
University



# IEST6001

## Field Ecology for Environmental Management

Term Two // 2019

## Course Overview

### Staff Contact Details

#### Convenors

Name	Email	Availability	Location	Phone
Suzanne Schibeci	suzanne.schibeci@unsw.edu.au	appointment via email		

### School Contact Information

School of Humanities and Languages

Location: School Office, Morven Brown Building, Level 2, 258

Opening Hours: Monday - Friday, 9am - 5pm

Phone: +61 2 9385 1681

Fax: +61 2 9385 8705

Email: [hal@unsw.edu.au](mailto:hal@unsw.edu.au)

## Course Details

### Credit Points 6

### Summary of the Course

Field Ecology for Environmental Management will introduce students to the basics of ecology and how it relates to the management of contemporary environmental issues. The course is designed primarily as a disciplinary knowledge course for the Masters of Environmental Management. In essence the course is an introduction to applied ecology, how ecologists develop questions, design sampling programs, collect data and then how this contributes to our understanding of ecological issues. This course will demonstrate how fundamental ecological principles can guide managers to make informed decisions.

The course will comprise of two components. Firstly, a short series of lectures that will provide students with a fundamental understanding of ecological principles including components of ecological systems, population dynamics, relationship between the physical world and species distribution and abundance, species interactions, principles of ecological sampling, hypothesis testing and basic statistical tools. Secondly, the students will then apply this knowledge in an intensive four day field component at the UNSW Smiths Lake field station. Students will develop skills in collecting ecological data on a range of ecosystems including terrestrial, estuarine and marine. This will demonstrate how the theory learned during the lectures, applies to real world studies in contrasting ecosystems. The course will have a focus on the impact of ecology primarily in an Australian environmental context.

### Course Learning Outcomes

1. Explain key components of population processes involved in the distribution and abundance of species
2. 1) Identify and explain fundamental types of species interactions and how these may influence population or community processes
3. 1) Explain the fundamentals of ecosystem structure and function
4. 1) Develop basic conceptual models to identify human impacts based on ecological principles, and apply these models to environmental management situations
5. Discuss the issues and implications surrounding variability and complexity in ecological data and how this influences ecology as a science.

### Teaching Strategies

Teaching Strategies for IEST6001 is composed of two formats

1) **Lectures** in fundamental ecology are aimed at developing knowledge of natural patterns and the processes which drive these observations. Key theoretical concepts are coupled with examples of experiments and studies in which ecologists have contributed to environmental issues with the data they collect and the questions they address. Ecological principles including population dynamics, ecological communities, species interactions and ecosystem processes will be introduced in an applied ecology context. In doing so, a clear relationship between ecology as a science, and the management of natural resources will be clearly apparent.

2) A **field trip** will be undertaken to introduce students to sampling and analytical techniques they may encounter in the field of ecology, including mammal trapping, plant surveys, fish and marine sampling. Workshops in computer laboratories will then allow student to compile, analyse and learn how to present

the data they collected while out in the field. The fieldtrip will provide a practical experience for the students, which is designed to build upon the theory and concepts covered during the lecture component of the course. The day of computer laboratory sessions will introduce students to basic ecological data management skills and statistical packages.

This course will be offered in distance mode for off campus students, it is strongly suggested students who cannot attend lectures, access the content via Moodle. It is expected all students will enhance their learning by reading suggested articles and other material which will be highlighted during lectures. This course will adhere to the UNSW Guidelines on Learning and Teaching.

The field component at Smiths Lake will be compulsory for all students. Skills, knowledge and learning to work as a team member, which are developed out in the field, cannot be replicated in any other mode of teaching (i.e. online learning).

#### Rationale of IEST6001

This course is included in the Masters of Environmental Management program to familiarise students with the fundamental principles of ecology. Ecological processes are pervasive and at the very basis of the way in which ecosystems function and respond to the intervention of human management. Environmental managers need at least a basic knowledge of the links between the physical world and ecological communities, the ways in which species interact and how to interpret the results of ecological studies.

A feature of this course is taking the students into the field. This provides a valuable learning experience as students can participate in ecological field programs, in doing so, relate some of the basic knowledge learned in lectures, to a range of ecosystems around the Smiths Lake field station.

# Assessment

## Assessment Tasks

Assessment task	Weight	Due Date	Student Learning Outcomes Assessed
Role of ecology in environmental management	20%	23/06/2019 11:00 PM	4,5
Field Report	50%	18/08/2019 11:00 PM	N/A
Test	30%	After the end of term	1,4,5

## Assessment Details

### Assessment 1: Role of ecology in environmental management

**Start date:** From Week 1

**Length:** 1000 words

**Details:** Students will choose an environment, community or species they are particularly interested in, researching how ecological theory and techniques can assist in its management. Feedback will be given via written comments on the topic, writing style and research techniques.

#### Additional details:

Further details will be available via your Moodle site.

**Submission notes:** This assignment requires a short report.

**Turnitin setting:** This assignment is submitted through Turnitin and students do not see Turnitin similarity reports.

### Assessment 2: Field Report

**Start date:** You need to start work on this during your field trips

**Length:** 3,500 words plus diagrams and tables.

**Details:** With guidance from the course convener, students will design and carry out a field study in small groups. While the field work will be collaborative, each student will submit an individual report. Formative feedback will be given to the groups on their field study design, data collection and analyses as the study progresses. Summative feedback on the report will be given via rubric based on the RSD framework, along with detailed written comments, highlighting areas of merit and where improvement could be made.

#### Additional details:

This is your major assignment for the course and is the culmination of your field work, your literature study and your learning about methodology.

**Turnitin setting:** This assignment is submitted through Turnitin and students do not see Turnitin similarity reports.

### **Assessment 3: Test**

**Start date:**

**Details:** A final test will be held in the exam period. The test will be offered via Moodle quiz, so students will be able to do this at a time convenient to them, but with a time limit once commenced. Feedback will be given using general comments and model answers.

**Additional details:**

The test is accessed via Moodle. It can be taken within a five day period, with two hours to complete once started. Expect a mix of multiple choice, short answer and short essay style. Further details via your Moodle site.

**Submission notes:** This is an on-line test.

**Turnitin setting:** This is not a Turnitin assignment

## Attendance Requirements

Students are strongly encouraged to attend all classes and review lecture recordings.

## Course Schedule

[View class timetable](#)

### Timetable

Date	Type	Content
Week 1: 3 June - 7 June	Seminar	<p>The first week is an interactive seminar that introduces the whole course: We will consider: House keeping; Course expectations; What is ecology? Field project purpose and schedule; The problem of pessimism in ecology.</p> <p>NOTE: The overall course structure is:</p> <ul style="list-style-type: none"> <li>• Weeks 1-3 First series of three seminars. These take place on campus, or on-line for distance students. Submit your preliminary assignment in Week 3.</li> <li>• Weeks 5-8 Field trips (see below). Both on-campus and distance students must take part.</li> <li>• Weeks 7-9 Second series of three seminars – on campus or on-line for distance students.</li> <li>• Final work to complete your major report and do the test.</li> </ul> <p>See details in your Moodle site.</p>
Week 2: 10 June - 14 June	Seminar	Observation, sampling and analyses: Topics include: Preparation; Techniques; Analysis; Presentation
Week 3: 17 June - 21 June	Seminar	Community Ecology and Species interactions: Topics include Types of interactions; Diversity; Niches; Succession
Week 4: 24 June - 28 June		
Week 5: 1 July - 5 July	Fieldwork	<p><b>Important Note: This is the first week in which field work takes place. Please note that in 2019, your field sites will NOT include Smiths Lake, and locations will be close to Sydney.</b></p> <p>Field Trips will be held on 2 Saturdays and 2 Week Days in Weeks 5 - 8. Students must attend 2 out of the 4. The final schedule of the fieldwork component will be confirmed and finalised in the</p>

		<p>first class meeting. Please note: the field work component is a compulsory component for all enrolled students in the course. Students enrolled in the distance delivery mode must be available to attend the field work component.</p> <p><b>Further Guidance in your Moodle site.</b></p>
Week 6: 8 July - 12 July	Fieldwork	Please see Week 5 note regarding field work.
Week 7: 15 July - 19 July	Seminar	<p><b>NOTE: Field work also continues this week. Please see Week 5 note on Field Work.</b></p> <p><b>This is the start of the second series of three in-class or on-line seminars.</b></p> <p>Population dynamics: Topics include Growth and limitation; Control and regulation; Genetics; Life-histories; Techniques in population measurement</p>
Week 8: 22 July - 26 July	Seminar	<p><b>NOTE: Field work also continues this week. Please see Week 5 note on Field Work.</b></p> <p><b>The seminar is in class or on-line...</b></p> <p>Development of Australian ecosystems: Topics include Evolution of Australian flora and fauna; The human impact on Australian ecosystems; Implications for management.</p>
Week 9: 29 July - 2 August	Seminar	<p>Application of ecological processes to the future: Topics include Climate change; Evolutionary changes.</p> <p>Once the series of seminars is complete, you have a further two weeks to complete your major report.</p> <p>See your Moodle site for further guidance.</p>

## **Resources**

### **Prescribed Resources**

Resources will be discussed in the first class. Any recommended readings will be available through LEGANTO in Moodle, in the library or in class.

There are a number of good texts which are useful to reinforce the concepts covered in class, and any general Ecology text will be useful for this purpose. One example which is available in the library is: Attiwill, P and Wilson, B. (2006) Ecology: Australian Perspective. Oxford University Press, South Melbourne.

There are also a number of journals available through the library which publish original research or reviews, which you may find useful for your area of interest: Austral Ecology, Ecology, Journal of Ecology and Oecologia are the major ones of the Southern Hemisphere, the Americas, Britain and Europe, respectively.

### **Recommended Resources**

Accessible via your Moodle site, using LEGANTO

### **Course Evaluation and Development**

Student Feedback is via MyExperience. Based on previous feedback, we are working to enhance the field work components of several postgraduate environment courses – largely through wider use of on-line resources.

## **Submission of Assessment Tasks**

## **Submission of Assessment Tasks**

### **Turnitin Submission**

If you encounter a problem when attempting to submit your assignment through Turnitin, please telephone External Support on 9385 3331 or email them on [externalteltsupport@unsw.edu.au](mailto:externalteltsupport@unsw.edu.au) . Support hours are 8:00am – 10:00pm on weekdays and 9:00am – 5:00pm on weekends (365 days a year). If you are unable to submit your assignment due to a fault with Turnitin you may apply for an extension, but you must retain your ticket number from External Support (along with any other relevant documents) to include as evidence to support your extension application. If you email External Support you will automatically receive a ticket number, but if you telephone you will need to specifically ask for one. Turnitin also provides updates on their system status on Twitter.

Generally, assessment tasks must be submitted electronically via either Turnitin or a Moodle assignment. In instances where this is not possible, it will be stated on your course's Moodle site with alternative submission details.

For information on how to submit assignments online via Moodle: <https://student.unsw.edu.au/how-submit-assignment-moodle>

## Academic Honesty and Plagiarism

Plagiarism is using the words or ideas of others and presenting them as your own. It can take many forms, from deliberate cheating to accidentally copying from a source without acknowledgement.

UNSW groups plagiarism into the following categories:

**Copying:** using the same or very similar words to the original text or idea without acknowledging the source or using quotation marks. This also applies to images, art and design projects, as well as presentations where someone presents another's ideas or words without credit.

**Inappropriate paraphrasing:** Changing a few words and phrases while mostly retaining the original structure and/or progression of ideas of the original, and information without acknowledgement. This also applies in presentations where someone paraphrases another's ideas or words without credit and to piecing together quotes and paraphrases into a new whole, without appropriate referencing.

**Collusion:** working with others but passing off the work as a person's individual work. Collusion also includes providing your work to another student before the due date, or for the purpose of them plagiarising at any time, paying another person to perform an academic task, stealing or acquiring another person's academic work and copying it, offering to complete another person's work or seeking payment for completing academic work.

**Inappropriate citation:** Citing sources which have not been read, without acknowledging the "secondary" source from which knowledge of them has been obtained.

**Duplication ("self-plagiarism"):** submitting your own work, in whole or in part, where it has previously been prepared or submitted for another assessment or course at UNSW or another university.

Correct referencing practices:

- Paraphrasing, summarising, essay writing and time management
- Appropriate use of and attribution for a range of materials including text, images, formulae and concepts.

Individual assistance is available on request from The Learning Centre (<http://www.lc.unsw.edu.au/>). Students are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting and proper referencing of sources in preparing all assessment items.

UNSW Library also has the ELISE tool available to assist you with your study at UNSW. ELISE is designed to introduce new students to studying at UNSW but it can also be a great refresher during your study.

Completing the ELISE tutorial and quiz will enable you to:

- analyse topics, plan responses and organise research for academic writing and other assessment tasks
- effectively and efficiently find appropriate information sources and evaluate relevance to your needs
- use and manage information effectively to accomplish a specific purpose
- better manage your time

- understand your rights and responsibilities as a student at UNSW
- be aware of plagiarism, copyright, UNSW Student Code of Conduct and Acceptable Use of UNSW ICT Resources Policy
- be aware of the standards of behaviour expected of everyone in the UNSW community
- locate services and information about UNSW and UNSW Library

Some of these areas will be familiar to you, others will be new. Gaining a solid understanding of all the related aspects of ELISE will help you make the most of your studies at UNSW.

<http://subjectguides.library.unsw.edu.au/elise/aboutelise>

## **Academic Information**

For essential student information relating to:

- requests for extension;
- late submissions guidelines;
- review of marks;
- UNSW Health and Safety policies;
- examination procedures;
- special consideration in the event of illness or misadventure;
- student equity and disability;
- and other essential academic information, see

<https://www.arts.unsw.edu.au/current-students/academic-information/protocols-guidelines/>

## **Image Credit**

Images by Paul Brown

## **CRICOS**

CRICOS Provider Code: 00098G