IEST7001

Engaging Science for Environmental Leadership

Term One // 2021

School of Humanities and Languages // UNSW Arts and Social Sciences

Course Overview

Staff Contact Details

Convenors

Name	Email	Availability	Location	Phone
Laura McLauchlan	laura.mclauchlan@unsw.edu.au	Monday 5-6 or by appointment	Morven Brown Room 269	please use email

School Contact Information

School of Humanities and Languages

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

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

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Course Details

Credit Points 6

Summary of the Course

Effective environmental leadership and care is dependent on accurate and responsive information about our environments – but how do we know the world? This course introduces, examines, and demystifies a diverse range of scientific modes of environmental engagement and knowledge. The course aims to make the familiar aspects of science strange and the strange aspects familiar, encouraging embodied experience of scientific methods as well as situating such practices within their political and cultural contexts through analysis and through meeting with experts. You will learn to become comfortable with the use of a range of scientific modes of exploring environmental questions and to challenge yourself to think about the limits, insights, and contingencies of scientific practice. This course is suitable for both scientifically and non-scientifically trained students.

Course Learning Outcomes

1. Examine and apply a diverse range of scientific methods used in environmental care, leadership, and change-making
2. Use a range of theories of knowledge to analyse scientific practices and embed them within their sociocultural contexts
3. Define a range of parameters used in environmental sciences, including their related properties, their units, dimensions, and techniques of measurement
4. Describe the essential elements of scientific methods, experimental design, statistical analysis and uncertainties, and appreciate their importance in environmental care and leadership
5. Communicate effectively with environmental scientists and modellers, as well as non-scientific audiences
6. Recognise and contextualise sound scientific practice and use this as a basis to make well-grounded and responsive decisions about environment and society questions

Teaching Strategies

Using lectures, activities inside and outside of the classroom, and reflexive discussions, this course introduces a number of core scientific disciplines and practices. This course uses both theory and practical experience to encourage you to develop awareness of both embodied and sociocultural contexts of the sciences and their relevance to environmental care, leadership, and change-making.

Assessment

Assessment Tasks

Assessment task	Weight	Due Date	Student Learning Outcomes Assessed
Weekly Responses	30%	Not Applicable	1, 2, 3, 4
Final Report	50%	26/04/2021 06:00 PM	3, 5, 6
Quiz	20%	29/03/2021 07:00 PM	1, 3, 4

Assessment Details

Assessment 1: Weekly Responses

Start date: Not Applicable

Details:

In each week's responses, students will be required to both respond to the readings for the week and to a short scientific activity (approximately 1500 words total)

Written feedback will be supplied.

Turnitin setting: This is not a Turnitin assignment

Assessment 2: Final Report

Start date: Not Applicable

Details:

In this final report of 2500 words, students will be asked to analyse a particular instance of the use of scientific analysis within an environmental issue. Students will be required to consider the social and cultural contexts of the use of scientific methods as well as to examine the possibilities a science-and-society-informed approach might offer to environmental leadership and change-making.

Written feedback will be supplied.

Turnitin setting: This assignment is submitted through Turnitin and students can see Turnitin similarity reports.

Assessment 3: Quiz

Details:

In this online quiz, students will be tested on their understanding and recognition of a range of modes of scientific measurement and analysis. Quiz length: 40 minutes.

Feedback will be given using general comments and model answers.

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

Attendance Requirements

Attendance in lectures (whether via distance or in person) is required for this course. Students who cannot be part of live lectures must make other arrangements with the course convenor to meet course requirements.

Course Schedule

View class timetable

Timetable

Date	Type	Content
Week 1: 15 February - 19 February	Seminar	**Introduction to Engaging Science** In this introductory seminar we will give an overview of the course as well as cover three main premises of this course: 1. Science is social. 2. The power of science can lead to blocks in both in both learning and communicating science (but these can be overcome!) 3. Nuanced understanding of science is necessary for great environmental care. We will look at—among many different ways of knowing—what precisely 'science' is. We will also get to meet each other and start learning what we each care about most within the environmental realm. You will also start setting some goals for what you want to achieve during this course.
Week 2: 22 February - 26 February	Seminar	**Learning Science and Science Cultures** Although science is often contrasted with 'culture', in this seminar we will look at the cultural aspects of science. Specifically, we will look why recognising the culture of (various) sciences and other ways of knowing matters as well as looking at the ways in which different cultural moments have been welcoming of some sciences and technologies and not others. After doing some shame-busting, we will introduce ideas around hypothesis testing, limits and uncertainty. We will also get a sense of how science looks from a multi-species lens, looking both at some of the limits of human knowing as well as technologies that can extend what we are able

		to know.
Week 3: 1 March - 5 March	Seminar	**Physical sciences: What is our world? And how do we know?** Scientific understandings have hugely influenced how we understand our world. In this seminar we will look at some of the histories of ways of measuring and knowing the physical world and—through some practical experience—begin to reflect on how these technologies of knowing shape our relationship with the more-than-human world.
Week 4: 8 March - 12 March	Seminar	**Natural Sciences and the Development of Ecological Sciences** In this seminar we will look at the development and practices of the ecological sciences. COVID safety allowing, we will also head outside to examine the living world around us through various natural scientific lenses.
Week 5: 15 March - 19 March	Seminar	**Lies and Damn Lies? Stats and making (powerful) evidence** Statistics might not have a reputation for being particularly sexy. However, stats are full of power (and potentially intrigue!). In this session we will look both at how can we use stats to better understand the world as well as the limits of that knowing. We will also look at how we can create data that constitutes the kinds of evidence that politicians might see as 'legitimate knowledge'
Week 6: 22 March - 26 March	Seminar	**Climates of science** In this seminar we will pull together much of what we have learned so far to analyse particular contemporary environmental issues, both working to understand the science as well as to place the science within the social cultural worlds in which it functions (and doesn't). This seminar will model some of the ways in which you might approach your final assignment.
Week 7: 29 March - 2 April	Seminar	**Science Fair Day** In this seminar, following our quiz, we will share our preliminary ideas about our final projects and discuss what supports we might be needing to carry them out.

Week 8: 5 April - 9 April	Seminar	**Engaging Science** Possible fieldtrip (depending on COVID safety) TBA
Week 9: 12 April - 16 April	Seminar	**Communicating Science** From our journey through the course so far, we know that scientific work can be both intellectually and culturally challenging. When we want to communicate science, how can we avoid either patronising our audiences or over-complicating the science? In this seminar, we will share and discuss our favourite examples of public engagement of and with science for the environment. We will think about our audiences (corporate? General public? Lobbying?) and reflect on our final projects.
Week 10: 19 April - 23 April	Seminar	**Love and science: sustaining worlds** In this final seminar, we will return to cultural aspects of science, but in a different way: how can scientific practice help people to fall in love with the world around them? How we sustain ourselves as people doing the difficult work of processing often challenging data about the state of our planet? What is the work we care about most going forward, and what sorts of collaborations do we need to be a part of to support that?

Resources

Prescribed Resources

There is no required text for this course. All readings will be available via Leganto.

Recommended Resources

All readings will be available via Leganto.

Course Evaluation and Development

Student feedback gathered via My Experience, MEM program-revision interviews and informal during-course discussions have all informed revisions to this course. As this course is intended to meet your needs, please feel free to give feedback at any stage.

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 . 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/

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Acknowledgement of Country

We acknowledge the Bedegal people who are the traditional custodians of the lands on which UNSW Kensington campus is located.