UNSW Course Outline

GEOS2241 Electrify Everything: Sustainable Solutions to Climate Change - 2024

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General Course Information

Course Code : GEOS2241
Year : 2024
Term : Term 3
Teaching Period : T3
Is a multi-term course? : No
Faculty : Faculty of Science
Academic Unit : School of Biological, Earth and Environmental Sciences
Delivery Mode : In Person
Delivery Format : Standard
Delivery Location : Kensington
Campus : Sydney
Study Level : Undergraduate
Units of Credit : 6

Useful Links

Handbook Class Timetable

Course Details & Outcomes

Course Description

Australia has more than enough sun and wind power to completely electrify and have more to

sell to our neighbours. But how are we going to do this?
In answering these questions we need to address:

How do we transform our coal fired power stations to run on sun and wind?
How do we make our houses and buildings more sustainable?
How do we integrate electric cars and plug them into the new grid?
Where will all the new jobs be in the new renewable energy economy?

Exploring the topics of electrification, new technologies, policy and social barriers and other key issues, this course will give students a greater insight into one of the most important policy challenges confronting Australia and the world today. This course encourages students from all disciplines to engage in a series of interactive face to face lectures and group collaboration via a flipped-classroom.

Course Aims

This course aims to:
Create awareness of the available solutions to climate change and in reducing carbon emissions from the energy sector in Australia.
Understand basic climate science for the Australian region
Explain the individual and policy options that are available to reduce the problem
Identify barriers to carrying out solutions
Connect Australian situation to international sphere
By exploring these and other key issues, this course will give students a greater insight into one of the most important science and policy challenges confronting Australia and the world today.

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Analyse the diverse range of sectors, actors, and interdisciplinary approaches that impact and affect the energy transition.
CLO2 : Discuss the complexities of the interaction between the energy transition and future sustainability, and how this can be affected by political realities and corporate and business priorities.
CLO3 : Identify and discuss the other ways to develop policies that can provide our society the energy it needs without causing undue environmental damage.
CLO4 : Apply an interdisciplinary approach to evaluate the need for multidimensional solutions to complex energy policy problems.
CLO5 : Communicate and present scientific information in both written and verbal form for a non-expert audience.

Course Learning Outcomes	Assessment Item
CLO1 : Analyse the diverse range of sectors, actors, and interdisciplinary approaches that impact and affect the energy transition.	• Major essay • Final test
CLO2 : Discuss the complexities of the interaction between the energy transition and future sustainability, and how this can be affected by political realities and corporate and business priorities.	• Weekly group presentations • Major essay
CLO3 : Identify and discuss the other ways to develop policies that can provide our society the energy it needs without causing undue environmental damage.	• Final test • Major essay
CLO4 : Apply an interdisciplinary approach to evaluate the need for multidimensional solutions to complex energy policy problems.	• Weekly group presentations • Final test • Major essay
CLO5 : Communicate and present scientific information in both written and verbal form for a non-expert audience.	• Weekly group presentations • Major essay

Learning and Teaching Technologies

Moodle - Learning Management System

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Major essay Assessment Format: Individual	50%	Start Date: Not Applicable Due Date: Not Applicable
Weekly group presentations Assessment Format: Group	30%	Start Date: Not Applicable Due Date: Not Applicable
Final test Assessment Format: Individual	20%	Start Date: Not Applicable Due Date: Not Applicable

Assessment Details

Major essay

Assessment Overview

You will be expected to choose an essay topic (from a wide choice of subject matter) that will be

discussed in the first week. The essay comprises 50% of the final course mark and is broken up into two parts.

You will first be asked to submit a 500-word outline of your proposed essay topic by week 4 to receive feedback on your selection, references and approach. This is worth 15% and feedback will be given within 1 week of submission.

The final essay is 2500 words long and worth 35%. Marks and comments from academic teaching staff will be returned to students within two weeks of submission. The essay assessment will be discussed in week 2, with a final hand-in date after the mid-term break.

This assessment assesses your ability to understand, discuss, and synthesise ideas and arguments relevant to your chosen essay topic.

Course Learning Outcomes

- CLO1 : Analyse the diverse range of sectors, actors, and interdisciplinary approaches that impact and affect the energy transition.
- CLO2 : Discuss the complexities of the interaction between the energy transition and future sustainability, and how this can be affected by political realities and corporate and business priorities.
- CLO3 : Identify and discuss the other ways to develop policies that can provide our society the energy it needs without causing undue environmental damage.
- CLO4 : Apply an interdisciplinary approach to evaluate the need for multidimensional solutions to complex energy policy problems.
- CLO5 : Communicate and present scientific information in both written and verbal form for a non-expert audience.

Assignment submission Turnitin type

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

Generative AI Permission Level

Simple Editing Assistance

In completing this assessment, you are permitted to use standard editing and referencing functions in the software you use to complete your assessment. These functions are described below. You must not use any functions that generate or paraphrase passages of text or other media, whether based on your own work or not.
If your Convenor has concerns that your submission contains passages of AI-generated text or media, you may be asked to account for your work. If you are unable to satisfactorily demonstrate your understanding of your submission you may be referred to UNSW Conduct &

Integrity Office for investigation for academic misconduct and possible penalties.
For more information on Generative AI and permitted use please see here.

Weekly group presentations

Assessment Overview

In the second hour of each weekly lesson, in small groups of 3-5, students will conduct new research on a pre-assigned topic and organise a small presentation to present to the class during weeks 3, 4, 5, 7, 9.

Marks and comments from academic teaching staff will be returned to students.

Course Learning Outcomes

- CLO2 : Discuss the complexities of the interaction between the energy transition and future sustainability, and how this can be affected by political realities and corporate and business priorities.
- CLO4 : Apply an interdisciplinary approach to evaluate the need for multidimensional solutions to complex energy policy problems.
- CLO5 : Communicate and present scientific information in both written and verbal form for a non-expert audience.

Assignment submission Turnitin type

This is not a Turnitin assignment

Generative AI Permission Level

No Assistance

This assessment is designed for you to complete without the use of any generative AI. You are not permitted to use any generative AI tools, software or service to search for or generate information or answers.
For more information on Generative AI and permitted use please see here.

Final test

Assessment Overview

The final test is designed to summarise your learning and problem-solving skills on all topics delivered across the term, including material from lectures, tutorials and guest speakers. The exam is typically one hour and consists of multiple choice questions, short numerical and short answer responses - details will be confirmed during the course. The test will occur in week 10. Feedback will be available through inquiry with the course convenor.

Course Learning Outcomes

- CLO1 : Analyse the diverse range of sectors, actors, and interdisciplinary approaches that impact and affect the energy transition.
- CLO3 : Identify and discuss the other ways to develop policies that can provide our society the energy it needs without causing undue environmental damage.
- CLO4 : Apply an interdisciplinary approach to evaluate the need for multidimensional solutions to complex energy policy problems.

Assignment submission Turnitin type

Not Applicable

Generative AI Permission Level

No Assistance

This assessment is designed for you to complete without the use of any generative AI. You are not permitted to use any generative AI tools, software or service to search for or generate information or answers.
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General Assessment Information

Grading Basis

Standard

Course Schedule

Attendance Requirements

Please note that lecture recordings are not available for this course. Students are strongly encouraged to attend all classes and contact the Course Authority to make alternative arrangements for classes missed.

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
	Elona Rey-Costa					Yes	Yes
	Donna Green					No	No

Other Useful Information

Academic Information

Upon your enrolment at UNSW, you share responsibility with us for maintaining a safe, harmonious and tolerant University environment.

You are required to:

- Comply with the University's conditions of enrolment.
- Act responsibly, ethically, safely and with integrity.
- Observe standards of equity and respect in dealing with every member of the UNSW community.
- Engage in lawful behaviour.
- Use and care for University resources in a responsible and appropriate manner.
- Maintain the University's reputation and good standing.

For more information, visit the UNSW Student Code of Conduct Website.

Academic Honesty and Plagarism

Referencing is a way of acknowledging the sources of information that you use to research your assignments. You need to provide a reference whenever you draw on someone else's words, ideas or research. Not referencing other people's work can constitute plagiarism.
Further information about referencing styles can be located at https://student.unsw.edu.au/referencing

Academic integrity is fundamental to success at university. Academic integrity can be defined as a commitment to six fundamental values in academic pursuits: honesty, trust, fairness, respect, responsibility and courage. At UNSW, this means that your work must be your own, and others' ideas should be appropriately acknowledged. If you don't follow these rules, plagiarism may be detected in your work.
Further information about academic integrity, plagiarism and the use of AI in assessments can be located at:

- The Current Students site,
- The ELISE training site, and
- The Use of AI for assessments site.

The Student Conduct and Integrity Unit provides further resources to assist you to understand your conduct obligations as a student: https://student.unsw.edu.au/conduct

Submission of Assessment Tasks

Penalty for Late Submissions

UNSW has a standard late submission penalty of:

- 5% per day,
- for all assessments where a penalty applies,
- capped at five days (120 hours) from the assessment deadline, after which a student cannot submit an assessment, and
- no permitted variation.

Any variations to the above will be explicitly stated in the Course Outline for a given course or assessment task.

Students are expected to manage their time to meet deadlines and to request extensions as early as possible before the deadline.

Special Consideration

If circumstances prevent you from attending/completing an assessment task, you must officially apply for special consideration, usually within 3 days of the sitting date/due date. You can apply by logging onto myUNSW and following the link in the My Student Profile Tab. Medical documentation or other documentation explaining your absence must be submitted with your application. Once your application has been assessed, you will be contacted via your student email address to be advised of the official outcome and any actions that need to be taken from there. For more information about special consideration, please visit: https://student.unsw.edu.au/special-consideration

Important note: UNSW has a "fit to sit/submit" rule, which means that if you sit an exam or submit a piece of assessment, you are declaring yourself fit to do so and cannot later apply for Special Consideration. This is to ensure that if you feel unwell or are faced with significant circumstances beyond your control that affect your ability to study, you do not sit an examination or submit an assessment that does not reflect your best performance. Instead, you should apply for Special Consideration as soon as you realise you are not well enough or are otherwise unable to sit or submit an assessment.

Faculty-specific Information

Additional support for students

- The Current Students Gateway
- Student Support
- Academic Skills and Support
- Student Wellbeing, Health and Safety
- Equitable Learning Services
- UNSW IT Service Centre
- Science EDI Student Initiatives, Offerings and Guidelines