



UNSW Course Outline

CVEN3701 Environmental Frameworks, Law and Economics - 2024

Published on the 02 Feb 2024

General Course Information

Course Code : CVEN3701

Year : 2024

Term : Term 1

Teaching Period : T1

Is a multi-term course? : No

Faculty : Faculty of Engineering

Academic Unit : School of Civil and Environmental Engineering

Delivery Mode : In Person

Delivery Format : Standard

Delivery Location : Kensington

Campus : Sydney

Study Level : Postgraduate, Undergraduate

Units of Credit : 6

Useful Links

[Handbook Class Timetable](#)

Course Details & Outcomes

Course Description

This course builds on the introduction to EISs to provide details of EIS methods, and the

ISO14001 Environmental Management System framework. It then provides an introduction to engineers on environmental law in Australia and NSW, focusing on planning law, and pollution laws. Environmental economics methods to account for environmental impacts in monetary terms, and the use of market mechanisms to achieve preferred environmental outcomes is covered at a level suitable for engineers.

Course Aims

This course builds on the broad multidisciplinary introduction to sustainability provided in the ENGG1000 Engineering Design and Innovation projects, and the range of environmental material accounting, environmental risk assessment, and sustainability assessment tools introduced in CVEN1701 Environmental Principles and Systems. The course will introduce Environmental Impact Statements (EISs), Environmental Management Systems (EMSs) and corporate and regional environmental reporting, each of which uses the tools covered in CVEN1701. The course then goes on to cover environmental law and economics, which can be used to implement sustainable strategies for corporations and regions. The course provides background material for application in the following courses in Year 3 and 4:

CVEN3502 Water and wastewater engineering

CVEN3702 Solid wastes and contaminant transport

CVEN4104 Sustainability in construction

CVEN4701 Planning sustainable infrastructure

The aim of this course is to enable students to undertake the preparation of EISs, EMSs and environmental reports, and to be able to have sufficient understanding of environmental law and economics to be able to work with professionals in these areas in order to implement sustainable strategies at corporate and regional levels.

The objectives of the course are to:

Know the standard formats for EISs, EMSs and sustainability reports, and to be able to use environmental analytical tools to critically analyse these documents, and be able to manage their preparation.

Acquaint students with the fundamental principles of Australian environmental law; and to explain how these principles are applied to important areas of environmental management and

regulation relevant to student in their studies and future career. The course assumes that participants have little or no background in the law, and so the course also provides some basic instruction about important legal concepts and structures. Although NSW is the 'default' jurisdiction for this course, the concepts and principles that are discussed are referable to all jurisdictions throughout Australia.

Introduce students in Engineering to the economic way of thinking about environmental issues. This section will begin with some elementary economic tools, and proceed to apply these tools to examine environmental issues. There is no attempt here to justify any particular economic method. If you like, it is a course in how to communicate with economists.

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Explain and demonstrate the typical structure and format of Environmental Impact Statements (EIS) and Environmental Management Systems (EMS).
CLO2 : Apply environmental analytical tools to examine and develop an EIS, EMS and sustainability report for a typical project, organisation or region.
CLO3 : Interpret the laws that apply to environmental impacts of projects in NSW and Australia, and interpret their use in EIS, EMS and sustainability reports.
CLO4 : Explain economic analytical methods and evaluate their application in EIS, EMS and sustainability reports.
CLO5 : Collaborate with an environmental economist in a multidisciplinary team to develop and prepare EIS, EMS and sustainability reports by for a range of projects, corporations and regions

Course Learning Outcomes	Assessment Item
CLO1 : Explain and demonstrate the typical structure and format of Environmental Impact Statements (EIS) and Environmental Management Systems (EMS).	<ul style="list-style-type: none"> • Critique of an EIS • Final Exam
CLO2 : Apply environmental analytical tools to examine and develop an EIS, EMS and sustainability report for a typical project, organisation or region.	<ul style="list-style-type: none"> • Critique of an EIS
CLO3 : Interpret the laws that apply to environmental impacts of projects in NSW and Australia, and interpret their use in EIS, EMS and sustainability reports.	<ul style="list-style-type: none"> • Environmental Law
CLO4 : Explain economic analytical methods and evaluate their application in EIS, EMS and sustainability reports.	<ul style="list-style-type: none"> • Environmental Economics • Final Exam
CLO5 : Collaborate with an environmental economist in a multidisciplinary team to develop and prepare EIS, EMS and sustainability reports by for a range of projects, corporations and regions	<ul style="list-style-type: none"> • Environmental Economics

Learning and Teaching Technologies

Moodle - Learning Management System | Echo 360

Additional Course Information

Course content

Environmental frameworks component:

- Course overview and briefing on frameworks assignment; a comprehensive review of environmental material accounting tools undertaken in CVEN1701.
- An outline of the required content and conventional methods for completing an EIS, with illustration from a case study EIS that will be used in the frameworks assignment.
- An outline of ISO14001 EMS, and credibility issues associated with undertaking an EMS.
- An outline of suggested contents of environmental reports for corporations and regions, with critical examination of case studies.

Environmental Law component:

The law part of this Unit is designed to introduce to you, key principles of environmental law and policy that may be of use to you in your future careers as Environmental Engineers.

The course assumes that participants have little or no background in the law, and so the course also provides some basic instruction about important legal concepts and structures. Although NSW is the 'default' jurisdiction for this course, the concepts and principles that are discussed are referable to all jurisdictions throughout Australia.

The content of the course concentrates upon those aspects of environmental law that you are most likely to come across in day to day practice as an engineer; requirements for gaining development consent; environmental assessment of projects and activities; pollution and waste; climate change and enforcement of environmental laws. But first we have to appreciate the nature of the Australian legal system and how it works.

Environmental economics component:

- Economics and the environment – applying basic economic tools to environmental management.
- An economic view on “sustainable development”; Externalities, optimal pollution, cost benefit analysis and environmental valuation.
- Economic instrument of pollution control - “Internalising externalities”. Role of environmental regulation.

- Application of Cost-Benefit Analysis into environmental policy decisions.
- Global externalities: ozone, climate change. Concept of carbon trading.

Lecturers

Prof Tommy Wiedmann is a Professor and leader of the Sustainability Assessment Program in the School of Civil and Environmental Engineering at UNSW. He has long-standing expertise in integrated sustainability assessment and environmental footprint analysis. His main research question is how to achieve human and planetary wellbeing concurrently. Tommy develops and applies environmental input-output analysis as part of a holistic concept to life cycle assessment, industrial ecology and sustainable consumption and production research.

Dr Gerry Bates is well known in Australia for his standard university text 'Environmental Law in Australia', now in its 10th edition. He is also the founder and Editor-in-Chief of the 'Environmental and Planning Law Journal' that has run continuously since its inception in 1983. Between 1986 and 1996, Dr Bates was a Green Independent Member of Parliament in Tasmania. Dr Bates served on the Board of the Environment Protection Authority of NSW from 1998 – 2010; and on the Board of Kimbriki Environmental Enterprises, a regional waste recovery centre and landfill on Sydney's Northern Beaches from 2008-2013. He currently teaches postgraduate courses in environmental law and sustainability at the University of Sydney; and is working with the Law Committee of the Mulloon Institute to modify or remove legal impediments to landscape rehydration projects that involve engineered 'leaky weirs'.

Ms Amy Cheung is a Senior Economist in the NSW government, specialising in economic appraisals and financial appraisals. Her doctoral thesis research was focused on developing a framework in economic theory to analyse the problem of salinity in Australia, and the use of possible market-based policies for its alleviation. Her other research interests include the economics of climate change, waste management, water trading and regulation.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Critique of an EIS Assessment Format: Group	20%	Start Date: Week 2 Due Date: 08/03/2024 08:00 PM
Environmental Law Assessment Format: Individual	30%	Start Date: Week 4 Due Date: 05/04/2024 08:00 PM
Environmental Economics Assessment Format: Group	20%	Start Date: Week 7 Due Date: 19/04/2024 08:00 PM
Final Exam Assessment Format: Individual	30%	Due Date: Final exam period

Assessment Details

Critique of an EIS

Assessment Overview

A written critique of a real Environmental Impact Statement (EIS) to demonstrate understanding of ecologically sustainable development (ESD) principles, techniques for environmental impact assessment (EIA) and environmental management systems (EMS). This is a group assignment, but students receive individual marks for the assessment.

Course Learning Outcomes

- CL01 : Explain and demonstrate the typical structure and format of Environmental Impact Statements (EIS) and Environmental Management Systems (EMS).
- CL02 : Apply environmental analytical tools to examine and develop an EIS, EMS and sustainability report for a typical project, organisation or region.

Assessment Length

specified by lecturer

Assignment submission Turnitin type

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

Environmental Law

Assessment Overview

This is an individual, written assignment worth 30% of the course mark and is designed to test students' understanding of the fundamental principles of Australian environmental law and how

these principles are applied to important areas of environmental management and regulation.

Course Learning Outcomes

- CLO3 : Interpret the laws that apply to environmental impacts of projects in NSW and Australia, and interpret their use in EIS, EMS and sustainability reports.

Assessment Length

specified by lecturer

Assignment submission Turnitin type

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

Environmental Economics

Assessment Overview

A group assignment aimed at applying elementary economic methods and tools to an environmental problem and at determining whether decisions about environmental policy should be made on the basis of economic analysis.

Course Learning Outcomes

- CLO4 : Explain economic analytical methods and evaluate their application in EIS, EMS and sustainability reports.
- CLO5 : Collaborate with an environmental economist in a multidisciplinary team to develop and prepare EIS, EMS and sustainability reports by for a range of projects, corporations and regions

Assessment Length

specified by lecturer

Assignment submission Turnitin type

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

Final Exam

Assessment Overview

Summative assessment on the frameworks and economics part of the course, related to course objectives and learning outcomes. The final exam will be a 2-hour exam (plus reading time during) the normal exam period. The questions will generally be similar to the exercises and questions discussed in workshops and lectures.

Course Learning Outcomes

- CLO1 : Explain and demonstrate the typical structure and format of Environmental Impact Statements (EIS) and Environmental Management Systems (EMS).
- CLO4 : Explain economic analytical methods and evaluate their application in EIS, EMS and sustainability reports.

Detailed Assessment Description

The final exam will be a 2-hour **closed-book** exam (plus reading time during) the normal exam period. However, students will be allowed to bring **one A4-sized sheet of paper with any information (printed or handwritten) on both sides**. There will not be any law questions in the final exam. The questions will generally be similar to the exercises and questions discussed in workshops and lectures. There are no previous exam papers available.

Assessment Length

2 hours

Assessment information

The Exam date is set by Exams Branch, and is confirmed in about Week 8 of session. You can access the time and date of the exam via your MyUNSW. Do not make arrangements that will prevent you from doing the exam in the Exam Period, or after the exam date is set in Week 8, on the day of the exam.

The final grade for this course will normally be based on the sum of the scores from each of the assessment tasks. The Final Examination is worth 30% of the Final Mark if class work is included and 100% if class work is not included. The class work is worth 70% of the Final Mark if included. **A mark of at least 40% in the final examination is required before the class work (quiz and assignments) is included in the final mark. Therefore, A MARK OF AT LEAST 40% IN THE FINAL EXAMINATION IS REQUIRED TO PASS THE WHOLE COURSE!**

Hurdle rules

A mark of at least 40% in the final examination is required to pass the whole course.

General Assessment Information

Date for marks returned are two weeks after the due date for all assessments. All assignments will be marked on the basis of whether the student demonstrates an understanding of the material. The assignments are additionally assessed with respect to the depth of the analysis, the breadth of its consideration of the question at hand and the clarity of the way in which the answer is presented. The use of tables and diagrams is encouraged where appropriate. Please make sure you do not exceed the imposed word limits.

Students who perform poorly in the quick quizzes and workshops are recommended to discuss progress with the lecturer during the trimester.

Students must submit their assignments as prescribed by each lecturer. This may involve electronic submission via Turnitin on Moodle or by hard copy as requested by the lecturer. Please ensure all the details on the Assignment cover sheet provided on UNSW Moodle are included in your assignment.

Penalties for late assignments apply!

If you are unwell or have other extenuating circumstances which prevent you from completing an assessment, you always have to **apply for Special Consideration before the submission deadline**. Otherwise the fit-to-submit rule applies, i.e. by sitting or submitting an assessment on the scheduled assessment date, the student is declaring that they are fit to do so and cannot later apply for Special Consideration. All requests for extensions and/or special consideration are to be submitted through the Special Consideration portal on MyUNSW (My Student Profile tab > My Student Services > Online Services > Special Consideration). See the following website for further information: <https://student.unsw.edu.au/special-consideration>.

Grading Basis

Standard

Requirements to pass course

A mark of at least 40% in the final examination plus at least 50% of the total course mark.

Course Schedule

Attendance Requirements

For courses with Workshops and/or Labs, attendance for those classes is a necessary part of the course. You must **attend at least 80% of the workshop/lab** in which you are enrolled for the duration of the session.

General Schedule Information

Refer to Moodle page for detailed course schedule information.

Course Resources

Prescribed Resources

Prerequisite material from CVEN1701 is provided on Moodle.

Recommended Resources

Environmental Frameworks:

There are no prescribed textbooks for this course. We recommend the following two books, which provide useful background knowledge:

Peters, G. and Svanström, M. (2019) *Environmental Sustainability for Engineers and Applied Scientists*. Cambridge University Press, Cambridge. <https://doi.org/10.1017/9781316711408>. Available through UNSW Library at <https://www.library.unsw.edu.au>.

Diesendorf, M. and Taylor, R. (2023) *The Path to a Sustainable Civilisation: Technological, Socioeconomic and Political Change*. Springer Nature Singapore, Singapore. <https://doi.org/10.1007/978-981-99-0663-5> and <https://sustainablecivilisation.com>
Available from the UNSW bookshop: <https://www.bookshop.unsw.edu.au/details.cgi?ITEMNO=9789819906628>

Environmental Law:

There is no required textbook. Discussion in class and use of power point presentations will provide the necessary detail. You may also consult Bates, G *Environment Law in Australia*. (2019), 10th. Ed. LexisNexis. It is available in the law library.

Accessing the Law – www.austlii.edu.au (this will be explained in class).

Environmental Economics:

There is no required textbook. Students might wish to consult the following textbook in the library for further reading:

Perman, R., Yue, M., Common, M., Maddison, D., and McGilvray, J., 2012, *Natural Resource and Environmental Economics*, 4th edition, Pearson Education Limited, Essex.

An earlier edition of this textbook is available from the open reserve section at the UNSW library

(S 333.7/381).

Additional Readings, standards and guideline documents will be provided throughout the lecture series on UNSW Moodle with each lecture.

Course Evaluation and Development

We welcome student feedback throughout the course (e.g. through the Moodle Discussion Forum). This is very important to us – let us know what you think works well and what we can do better. This information will be used to continually improve the course.

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Convenor	Tommy Wi edmann		Room 106, School of Civil & Environmental Engineering (Building H20)	+61 2 9065 2065	agree via email	Yes	Yes
Lecturer	Gerry Bates		external (gerrybates@bigpond.com)		agree via email	No	No
	Amy Cheu ng		external (CVEN3701.AC@gmail.com)		agree via email	No	No

Other Useful Information

Academic Information

I. Special consideration and supplementary assessment

If you have experienced an illness or misadventure beyond your control that will interfere with your assessment performance, you are eligible to apply for Special Consideration prior to, or within 3 working days of, submitting an assessment or sitting an exam.

Please note that UNSW has a Fit to Sit rule, which means that if you sit an exam, you are declaring yourself fit enough to do so and cannot later apply for Special Consideration.

For details of applying for Special Consideration and conditions for the award of supplementary assessment, please see the information on UNSW's [Special Consideration page](#).

II. Administrative matters and links

All students are expected to read and be familiar with UNSW guidelines and policies. In particular,

students should be familiar with the following:

- [Attendance](#)
- [UNSW Email Address](#)
- [Special Consideration](#)
- [Exams](#)
- [Approved Calculators](#)
- [Academic Honesty and Plagiarism](#)
- [Equitable Learning Services](#)

III. Equity and diversity

Those students who have a disability that requires some adjustment in their teaching or learning environment are encouraged to discuss their study needs with the course convener prior to, or at the commencement of, their course, or with the Equity Officer (Disability) in the Equitable Learning Services. Issues to be discussed may include access to materials, signers or note-takers, the provision of services and additional exam and assessment arrangements. Early notification is essential to enable any necessary adjustments to be made.

IV. Professional Outcomes and Program Design

Students are able to review the relevant professional outcomes and program designs for their streams by going to the following link: <https://www.unsw.edu.au/engineering/student-life/student-resources/program-design>.

Note: This course outline sets out the description of classes at the date the Course Outline is published. The nature of classes may change during the Term after the Course Outline is published. Moodle or your primary learning management system (LMS) should be consulted for the up-to-date class descriptions. If there is any inconsistency in the description of activities between the University timetable and the Course Outline/Moodle/LMS, the description in the Course Outline/Moodle/LMS applies.

Academic Honesty and Plagiarism

UNSW has an ongoing commitment to fostering a culture of learning informed by academic integrity. All UNSW students have a responsibility to adhere to this principle of academic integrity. Plagiarism undermines academic integrity and is not tolerated at UNSW. *Plagiarism at UNSW is defined as using the words or ideas of others and passing them off as your own.*

Plagiarism is a type of intellectual theft. It can take many forms, from deliberate cheating to

accidentally copying from a source without acknowledgement. UNSW has produced a website with a wealth of resources to support students to understand and avoid plagiarism, visit: student.unsw.edu.au/plagiarism. The Learning Centre assists students with understanding academic integrity and how not to plagiarise. They also hold workshops and can help students one-on-one.

You 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 the proper referencing of sources in preparing all assessment tasks.

Repeated plagiarism (even in first year), plagiarism after first year, or serious instances, may also be investigated under the Student Misconduct Procedures. The penalties under the procedures can include a reduction in marks, failing a course or for the most serious matters (like plagiarism in an honours thesis or contract cheating) even suspension from the university. The Student Misconduct Procedures are available here:

www.gs.unsw.edu.au/policy/documents/studentmisconductprocedures.pdf

Submission of Assessment Tasks

Work submitted late without an approved extension by the course coordinator or delegated authority is subject to a late penalty of five percent (5%) of the maximum mark possible for that assessment item, per calendar day.

The late penalty is applied per calendar day (including weekends and public holidays) that the assessment is overdue. There is no pro-rata of the late penalty for submissions made part way through a day. This is for all assessments where a penalty applies.

Work submitted after five days (120 hours) will not be accepted and a mark of zero will be awarded for that assessment item.

For some assessment items, a late penalty may not be appropriate. These will be clearly indicated in the course outline, and such assessments will receive a mark of zero if not completed by the specified date. Examples include:

- Weekly online tests or laboratory work worth a small proportion of the subject mark;
- Exams, peer feedback and team evaluation surveys;
- Online quizzes where answers are released to students on completion;

- Professional assessment tasks, where the intention is to create an authentic assessment that has an absolute submission date; and,
- Pass/Fail assessment tasks.

Faculty-specific Information

[Engineering Student Support Services](#) – The Nucleus - enrolment, progression checks, clash requests, course issues or program-related queries

[Engineering Industrial Training](#) – Industrial training questions

[UNSW Study Abroad](#) – study abroad student enquiries (for inbound students)

[UNSW Exchange](#) – student exchange enquiries (for inbound students)

[UNSW Future Students](#) – potential student enquiries e.g. admissions, fees, programs, credit transfer

Phone

(+61 2) 9385 8500 – Nucleus Student Hub

(+61 2) 9385 7661 – Engineering Industrial Training

(+61 2) 9385 3179 – UNSW Study Abroad and UNSW Exchange (for inbound students)

School-specific Information

Final Examinations

Final Exams in T1 2024 will be held on campus between the 26th April and 9th May, and Supplementary Exams between the 20th - 24th May 2024. You are required to be available on these dates. Please do not to make any personal or travel arrangements during this period.

School Contact Information

For assistance with enrolment, class registration, progression checks and other administrative matters, please see [the Nucleus: Student Hub](#). They are located inside the Library – first right as you enter the main library entrance. You can also contact them via <http://unsw.to/webforms> or reserve a place in the face-to-face queue using the UniVerse app.

For course administration matters, please contact the Course Coordinator.

Questions about the this course should normally be asked during the scheduled class so that everyone can benefit from the answer and discussion.