
CVEN9888

Environmental Management

I. Introductory Notes 2016



University of New South Wales

Contents

- 1. INTRODUCTION**
- 2. SUBJECT PROFILE**
 - 2.1 Calendar Description
 - 2.2 Objectives
 - 2.3 Duration and Type of Instruction
 - 2.4 Lecture Schedule & Study Guide
- 3. ASSESSMENT**
 - 3.1 Assignment and Examination Schedule
 - 3.2 Assessment Criteria
 - 3.3 Assignment Policy
 - 3.4 Exam
- 4. LEARNING METHODS**
 - 4.1 Approach
 - 4.2 Staff
 - 4.3 Communications
 - 4.4 Texts and References
 - 4.5 General
- 5. GUIDE-LINES FOR ASSIGNMENTS**
 - 5.1 Calculations Format
 - 5.2 Reports Format

1 Introduction

These introductory notes provide information on the learning and assessment approach for this subject.

Before commencing this subject, work your way through the Moodle on the UNSW home page (www.unsw.edu.au). Contact the Course Lecturer promptly if you discover any anomalies.

Please take the time to read all these introductory notes, they have been prepared on the basis of common problems experienced by students in the past, and should therefore save you wasted time during the session.

Additional notes and exercises may be issued on the Moodle website for the course during session, depending on particular difficulties experienced by internal and external students.

Please retain an electronic copy of everything you send to the University.

2 Subject Profile

2.1 Calendar Description

- ♦ 6 Units of Credit
- ♦ No prerequisites
- ♦ Introduction to sustainable development principles; environmental impact statement techniques; environmental management systems; tools for the analysis and management of environmental impacts of engineering projects, including an introduction to environmental risk assessment, and more detailed treatment of a range of environmental material accounting techniques, including Life Cycle Assessment, Ecological Footprints, Material Flux Analysis and other material accounting techniques.

2.2 Objectives

The objectives of this subject are to :

- ♦ Provide an introduction to ecologically sustainable development principles and investigate in some detail how ESD might be operationalised through appropriate Environmental Impact Assessment of new project proposals, and Environmental Management Systems for corporations and regions. Provide an introduction to the use of some developing tools to assist in implementing EISs and EMSs, including environmental reviews and audits, Life Cycle Assessment, and Materials Flux Analysis.

Students will be provided with concepts and reference materials in the modules and will be expected to apply these to actual projects taken from the real world.

2.3 Duration and Type of Instruction

The internal version of this course is one session, 3 hours per week; nominally 2 hours lectures and 1 hour workshop. The subject lecturer anticipates that students will need to spend on average 10 hours per week in total to gain a satisfactory understanding of the course.

2.4 Syllabus, Lecture Schedule & Study Guide

The lecture schedule for CVEN9888 is outlined in Table 2.1. The Guided Learning Units generally follow this schedule; but will vary from year to year according to lecturer availability and the nature and scheduling of assignments. The GLU numbers will be maintained, and therefore will not always match the lecture schedule. Please refer to MyUNSW for the dates for each academic week. Please note the Break at Easter does not have an academic week number.

Table 2.1 Syllabus & Lecture Schedule for CVEN9888, internal class

Week	Lecturer	Theme	Topic	GLUs
1	Moore	Background	Subject overview, introduction to ESD	1
2	Moore		Overview of Environmental Material Account	5
3	Moore	Environmental	Ecological Footprints	9
4		Material	Anzac Day Holiday	
Break		Accounting	Not an academic week number	
5	Moore	Methods	Non-teaching week, some courses have site visit;	
6	Moore		LCA	7
7	Moore		MFA1	8
8	Moore		MFA2	8
9	Moore		MIPS	6
10	Moore		National Material Accounts EIS	11
11	Moore	Framework	EIS	2
12	Moore	Environmental	EMS	3
13	Moore	Management	SoE and Sustainability criteria and review	3, 12

Distance students use the current lecture schedule in the internal class to allocate your time to each topic. You will see that I also use this schedule in setting discussions via the Moodle discussion fora.

Stephen Moore, Senior Lecturer, Room Civil Eng 308, ph +612 9385 5073; email s.moore@unsw.edu.au Email is the most convenient way to contact me.

3 Assessment

3.1 Assignment and Examination Schedule

Assignment No.	Topic	Value	Due Date
1.	Ecological Footprints	20%	Noon Tuesday 26 April 2016
2a Internal	Short quizzes at beginning of lectures	10%	Week 2-13
2b Distance	Participation in Moodle	10%	Week 1-12
3	Exam	70%	During S1 Exam Period (12 June– 29 June 2015)

Assignment 1 should be undertaken in groups of 3 (2 will be allowed if there are not enough students). Only one report with the names of all group members on the cover sheet should be submitted. Any combination of internal and distance students is allowed.

Group formation procedure:

By Noon Tuesday 8 March 2016 (Week 2), send me an email with the names and student numbers of each group member; with a cc to each of the group members to indicate all agree to this self selected group. Students who have not sent me an email will be allocated randomly to a group. Group names (Group 1 etc) will be posted on Moodle by the lecture in Week 2. Please insert your Group Number on your assignment cover sheet.

3.2 Assignment Marking Criteria

Specific guidance on the value of components of each assignment is provided with the Assignments in this Subject Package. It is difficult to be more precise than the guidance provided without being too prescriptive and taking away the opportunity for initiative from the student.

In general terms, all assignments will be assessed against the following criteria :

- o Evidence of understanding of concepts; Exact correct numerical answers will rarely be required or be appropriate, but gross numerical errors which are left unchecked, and which indicate that the student does not understand the concepts, will be marked down heavily.
- o Ability to apply concepts to real world problems, and to make judgements based on incomplete data and the need to simplify systems in order to develop solutions.
- o Clarity of description, explanation and attention to the focus of the assignment.
- o Ability to structure an assignment logically and limit it to a reasonable length.

It is essential to complete and attach the assignment cover sheet to each completed assignment. It enables the Subject Administrator to easily acknowledge receipt of the assignment by the due date. Assignments are submitted on-line for all students, via Turnitin, as shown on the moodle site for the course.

3.3 Assignment Policy

Extensions of time will only be given in the case of medical problems or personal emergencies, and only if requested prior to the due date. Work and other extra curricular activities (holidays etc.) are not valid reasons for extensions of time without penalty. If a personal emergency (not a peak in work load) arises that may cause a delay in completing or sending the assignment, call the subject co-ordinator as soon as possible.

A penalty of 10% per day of the total mark for the assignment will be applied, commencing one day after the due date.

No student may pass a subject until all assignments have been completed and returned to the School.

Students should take note of the general guidelines provided in these Introductory Notes and any special requirements listed in individual assignments.

3.4 Exam

The exam will be a 2 hour closed book exam during the normal exam period. You are allowed to bring in one A4 sheet of paper with hand or typewritten notes, formulae, diagrams on both sides. The questions will generally be similar to the shorter questions in the Guided Learning Unit Exercises and in-class exercises. There are no previous exam papers available.

Calculators allowed are described at:

<https://student.unsw.edu.au/exams>

The Exam date is set by Exams Branch, and is confirmed in about Week 10 of session. You can access the time and date of the exam via your MyUNSW.

Final Examination

All students are expected to sit their final examination at the UNSW Kensington campus. For more information on exams such as approval guidelines to sit the final examination via distance (if required), please see the link below:

<http://www.engineering.unsw.edu.au/civil-engineering/resources/exam>

No supplementary exams are held for postgraduate courses. 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 10, on the day of the exam.

A supplementary exam will only be given in “WC” cases; ie there was a documented illness or misadventure on the day of the exam. You need to complete a Special Consideration form. See details at:

<https://my.unsw.edu.au/student/atoz/SpecialConsideration.html>

4 Learning Methods

4.1 Approach

Students have four major resources to assist their learning:

- The lectures and exercises undertaken during the lecture session. These are generally selected from the Guided Learning Units. Distance students have access to lectures via streaming AV on current lectures on Echo, accessed via Moodle.
- The Coursenotes provided in Part 4 of this Subject Package on the Moodle website, which should be studied actively by reading in order to answer the Guided Learning Units Exercises. These exercises highlight the important aspects of each topic. The Exercises will not be marked or assessed, but assistance will be provided by the Subject Lecturer if difficulties are encountered.
- o The lending facilities of the Library and advice from the Course Lecturer.
- o Other students currently undertaking the course externally. Contacts should be established in Week 1 of the course at the lecture or for distance students, via Moodle. Your colleagues are an invaluable source of assistance and should continue to be so after completion of the course.

4.2 Staff

The Course Co-ordinator and principal lecturer is:

Stephen Moore
Senior Lecturer in Environmental and Waste Management
Room 308 Civil Engineering.
Email : S.Moore@unsw.edu.au

Consulting times are those shown on the notice board Room308 or when the door is open.

All academic enquiries and questions relating to Coursenotes and assignment technical aspects should be directed to Stephen Moore.

4.3 Communications

The School of Civil & Environmental Engineering is continually trying to improve communications lines with and among students. The major modes are :

- ♦ Internet : you must have access to the Internet for this course. Once connected, at home, at work or the local library, you will be able to make use of the following :
 - Email : electronic mail communication with lecturers and other students, including students undertaking the course internally.
 - World Wide Web : all documents are now available on the web, via the Moodle website for the course.
 - An Email Mailing list has been established for this subject on the Civil Engineering server computer. Students are automatically subscribed to the list with standard UNSW email addresses; you must use your UNSW email for communication with UNSW. The mailing list allows lecturers to communicate with all students in the class; but the current arrangement does not allow individual students to connect to all other students. You should do this via the Moodle website for the course.
- UNSW Moodle an online teaching aid accessed via:
 - www.unsw.edu.au under CURRENT STUDENTS.
 - Support for Moodle is available on-line at this web site.

If you have problems, email me on s.moore@unsw.edu.au

4.4 Texts and References

4.4.1 Texts

There are no texts set for this subject. Coursenotes via pdf files are provided for this course.

4.4.2 Other References

The following references may be useful for assignments and to practitioners. They are available from the Library.

Commission for the Future, 1990; Our Common Future; Oxford University Press, Melbourne.

Yencken D and Wilkinson D, 2000; Resetting the Compass: Australia's journey towards sustainability; CSIRO Publishing, Collingwood, ISBN 0 643 06385 4

Brunner PH and Rechberger H, 2004; Practical Handbook of Material Flow Analysis, Lewis Publ, ISBN 1-5667-0604-1

Ayres, RU and Simonis UE; 1994; Industrial Metabolism: restructuring for sustainable development; United Nations University Press, Tokyo; ISBN 92-808-0841-9

4.4.3 UNSW Library

Many of our journals and books are e-versions. Go to

<https://www.library.unsw.edu.au/>

External (off campus) service for UNSW students

UNSW Library aims to assist off-campus students and staff to obtain resources in a timely manner. The Library's Document Services Unit supplies physical resources from the UNSW Library collections and will request resources not held from other suppliers. The library pays the forward mailing charges for materials requested. Off campus patrons are responsible for return postage costs and provision of a padded postage bag, to ensure the items are not damaged in transit.

Note: Due to limited loan periods and often lengthy delays in supplying physical resources, the library generally does not borrow books from overseas libraries for off-campus students and staff. For similar reasons, for off-campus students based overseas, generally only UNSW Library books will be provided. Copy requests are not affected.

All new Library external (off campus) service users need to register by completing the on-line registration form: <http://unsw.custhelp.com/app/offcampus/>

Once registered, you can locate library items using UNSW 'Library [Search](#) and request the resource via Library's **Interlibrary loan service request forms (ILL)** which are visible when you login with your zid/zpassword to your 'MyLibrary'. Refer to the [Interlibrary Loan Service](#) web page for more information on returning and renewing loans.

Off-campus students and staff can:

- Contact the library whenever you need assistance with resources or services. Make an [online enquiry](#); Visit the [Help Zone](#); or [Phone](#) the Kensington Main Library: (02) 9385 2650
- Access the Library's online resources from home using UNSW zid/zpasswords.
Check your hardware and software meets library requirements:
<https://library.unsw.edu.au/HowDoI/techhelp.html>
- Join the [University Library Australia & New Zealand \(ULANZ\)](#) borrowing scheme to borrow books from more conveniently located academic libraries.
- Use a range of Library [search tools](#) including finding journals. Learn more about finding [DATABASES](#). Learn about searching effectively on UNSW 'Library search' tool by clicking the [HELP](#) above the search box.

- Refresh information skills, learn how to find, evaluate and use academic peer reviewed information by working through the online exercise: [ELISE](#). This is particularly relevant if you are new to study or have not studied for some time.
- Find out about more library services for UNSW [postgraduate students](#).
- Learn more about using UNSW Library by viewing [video clips](#) especially, '[Smart searching with UNSW Library](#)'
- Connect to the Library for up to date news and to provide feedback via social media:
<https://www.facebook.com/UNSWLibrary>
<https://twitter.com/UNSWLibrary>

Referencing your work

Use the how to guide <https://student.unsw.edu.au/support-referencing-assignments>

Links to information about reference management software:

Endnote, Refworks, Mendeley.

http://unsw.custhelp.com/app/answers/detail/a_id/1181/kw/endnote/related/1

http://unsw.custhelp.com/app/answers/detail/a_id/1186/kw/refworks

<http://www.mendeley.com/>

Searching on the Internet using Google Scholar

To access UNSW Library subscriptions from *Google Scholar* you will need to set up your preferences as a once-off step. To do so, go to [Google Scholar](#)

1. Click on 'Settings' at the top right of screen
2. Select 'Library Links' on the LHS menu.
3. Type into the search box: 'University of New South Wales' and click search.
4. Tick all the boxes that mention University of New South Wales
5. Select Save Preferences
6. Go back to the *Google Scholar* search box
7. Perform the search for your article e.g. innovation on the education model of engineering management. Note: using quotation marks will search for a phrase
8. Either click on the hyperlinked article or Find it@UNSW to access the full text

If you are prompted to log in to access UNSW Library material please log in with your Zid and Zpass.

4.4.4 Dates to Note

Refer to MyUNSW for Important Dates available at:

<https://student.unsw.edu.au/dates>

4.4.5 Plagiarism

Beware! An assignment that includes plagiarised material will receive a 0% Fail, and students who plagiarise may fail the course. Students who plagiarise are also liable to disciplinary action, including exclusion from enrolment in the program.

Plagiarism is the use of another person's work or ideas as if they were your own. When it is necessary or desirable to use other people's material you should adequately acknowledge whose words or ideas they are and where you found them (giving the complete reference details, including page number(s)). The Learning Centre provides further information on what constitutes Plagiarism at:

<http://www.lc.unsw.edu.au/onlib/plag.html>

4.4.6 Academic Advice

For information about:

Notes on assessments and plagiarism,

School policy on Supplementary exams,

Special Considerations,

Solutions to Problems,

Year Managers and Grievance Officer of Teaching and Learning Committee, and

CEVSOC.

Refer to Academic Advice on the School website available at:

<http://www.engineering.unsw.edu.au/civil-engineering/resources/academic-advice>

5 Guidelines for Assignments

Assignments will consist of calculations or short reports or both. Guidelines on the presentation of calculations and reports are provided in 5.1 and 5.2.

5.1 Calculations Format

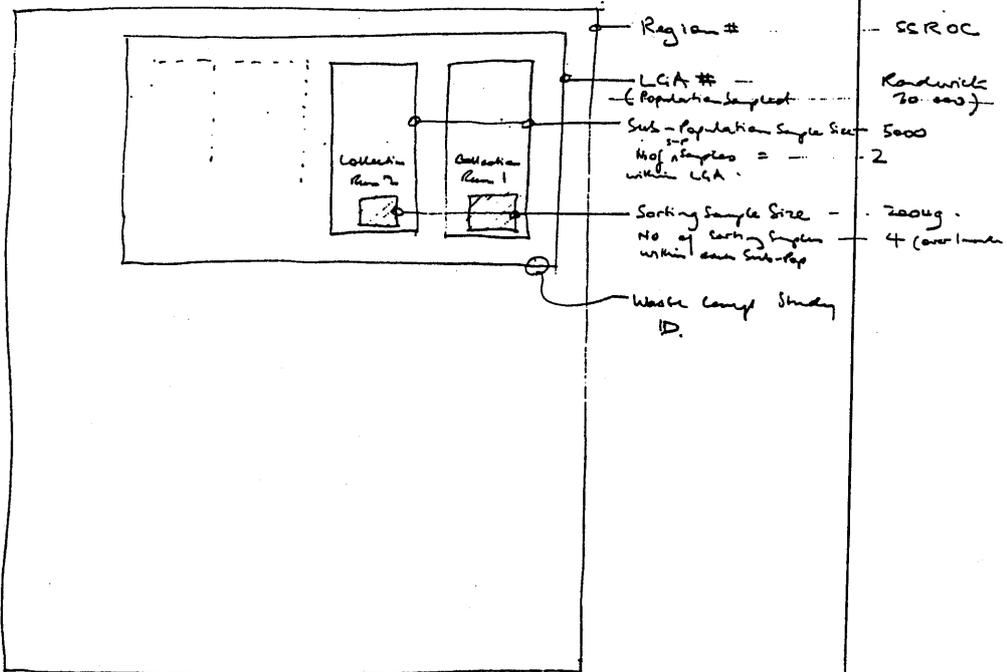
Calculations should be undertaken on squared or blank paper. Note the following suggestions (most assignments will have part of the mark on presentation);

- Provide a table of contents for calculations
- Title block on each page showing:
 - Assignment No., part
 - Calcs By
 - Date
 - Sheet No.
- List data and assumptions at start of each section of calculations.
- A reference list on the right hand side showing sources of data, cross reference to other parts of the calculations.
- Use headings and section numbers.
- Use diagrams and graphs where possible.
- Use a sharp HB or B pencil.
- Spread out your calc's
- Use words to guide the checker through the workings.
- Use tables to summarise calculations and outcome of calculations.
- Use spreadsheets and tabular calculations where any repetitive calculations are required.



3.2 Waste Streams Relational Model

WASTE COMPOSITION : Real World Model :



Example
 SCROC

Roadville
 20,000

5000

2

200g

4 (over time)

Could also be appropriate for 2 or 3 .. LGAs
 as the Population Sampled for one waste camp study ID

Waste Camp Study ID	Region	LGA	Sub-Pop ⁿ Sample Size (Pop ⁿ)	No of SP samples in LGA (No)	Sorting Sample Size (g)	No of Sorting bins per SP (No)
2001	203	1234	5000	2	200	4
2001	203	1235	5000	2	200	4
2002	203	1234	5000	2	200	4
2003	203	1235	5000	2	200	4

The camp data must be for whole region in WSCD Rel Composition Data provided for each LGA in WSCD Rel

FIGURE 5.1

5.2 Reports Format

Where an assignment requires presentation in the form of a report, the following should be included:

- Title Page
- Table of contents
- Page numbers
- Headings, sub-headings and sub-sub headings, all numbered
- References, providing full details in a List of references or the back of the report. Reference all data
- Appendices to include:
 - copy of the question (the Brief)
 - detailed calculations and workings (summarize in tabular form in the report).
- Write on one side of paper only so the marker can make notes on the blank facing page. Use 12 font single or 1.5 spacing.
- List points with brief expansion underneath the point, rather than provide verbose formal descriptions. e.g. use the following format instead of burying the important points in pages of text:

"The three factors governing the performance of incineration systems are:

- Time: the residence time of solids and gases at the elevated temperature affects destruction efficiency.
- Temperature: high temperatures lead to improved destruction efficiency.
- Turbulence: highly turbulent well mixed reactors achieve better destruction efficiencies.

These three factors work in combination to determine the overall efficiency of the incineration process. For instance:

- Short duration residence times at high temperatures can achieve the same destruction efficiency as longer residence times at lower temperatures and higher turbulence. e.g. 2 sec residence at 1200 °C in a rotary kiln has been shown to provide equal destruction of PCBs as 900 °C in a fluid bed incinerator (Dillon, 1986)."
- Make assumptions clear and explicit.
- Typed reports are required .
- Submit your report with a corner staple, with the standard cover sheet provided as the front cover.