

# Climate, Sustainability & Society (ENV1CSS) From the Ground Up:

The Report on a CTLC Pilot Project on the development, delivery and evaluation of a unique first year cross-disciplinary “Signature Subject” according to *Design for Learning* principles.

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## **Executive Summary**

This Pilot Project was funded to do two things. The first was to develop and teach a new subject, “Climate, Sustainability & Society” (ENV1CSS), an interdisciplinary, cross-Faculty, multi-campus Signature Subject utilizing “Design for Learning” guidelines. The second was to simultaneously analyse, evaluate and reflect on that experience in order to identify the resources and the impediments in the University’s culture and structural arrangements faced by such subjects. Some of our recommendations relate to improvements we will make to ENV1CSS, others relate to the University structural and cultural dimension. As such, the Pilot Project and this Report is a classic case of action research in that we intended to produce research that will strengthen the practice of teaching and developing Signature Subjects.

Section one, “Designing the Teaching and Learning Process”, is written for people with an interest in curriculum development, especially those engaged in developing and delivering new subjects of this type. The second section, “La Trobe Signature Subjects”, and the third, “Cross-Faculty Barriers” are addressed particularly to those concerned with curriculum development policy or in academic leadership roles.

### **1. Designing the Teaching and Learning Experience**

#### **1.1 Curriculum Design Principles**

Section one “Designing the Teaching and Learning Process” discusses the decision made by the ENV1CSS team to be interdisciplinary rather than multi-disciplinary. The other fundamental decision was that we would orient the curriculum towards equipping students to understand and engage in debates in the public sphere about this urgent real-world issue. A Public Lecture Series given by high-profile public intellectuals was built into the curriculum.

#### **1.2 From Principles to Practice: teaching, assessment, staffing and evaluation.**

These principles shaped the week-by-week teaching program, teaching resources and assessment tasks. Staffing was perhaps the most problematic area we confronted in the effort to realize our orienting principles: there are problems of availability, tutor training and habits of teaching style to address. ENV1CSS was thoroughly evaluated at several stages through the semester. We found this crucial and recommend that all Signature Subjects in their early development phase have a systematic evaluation process built into the planning.

### **2. La Trobe “Signature Subjects”**

We are pleased to see that the CTLC has committed itself to developing five new Signature Subjects to be offered in 2011, however we could not find a definition of the concept. This makes the task of defining the concept and contextualizing it within the University’s curriculum reform agenda an urgent one. We offer a preliminary definition by drawing on key ideas from the Green and White Papers. We discuss how ENV1CSS can be seen as a Signature Subject.

### **3. Cross-Faculty Barriers**

The experience of creating and running ENVICSS revealed some deeply entrenched elements of the University's financial, academic and personnel policies and practices which present huge impediments to the development and routine running of Signature Subjects. Funding and ownership of academic programs and the staffing of them are almost exclusively the responsibility of Faculties. The interdisciplinary, cross-Faculty and multi-campus nature of Signature Subjects cut against the grain of almost all elements of the organizational and institutional culture of the University. We make some far-reaching recommendations to begin addressing these problems.

### **4. Conclusion: Urgent Issues to Address, Good Reasons for Doing So**

The authors of this report are particularly concerned about a major contradiction between the University's strong commitment to Signature Subjects and the vulnerability of such subjects to staffing and resource exigencies. Currently the office of the DVC and the CTLC, are driving these innovations, yet the resources to carry them to fruition are in the hands of the Faculties. Faculties, Schools and Programs have a staffing profile shaped by their traditional obligations. Signature Subjects on the other hand, are dependent on people with appropriate expertise, available time and the goodwill to undertake such work. If a Signature Subject fails to deliver, it will do so in a very public way.

On a positive note: the authors feel that ENVICSS was, overall, a great success and should encourage the University's commitment to developing more Signature Subjects in the future.

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## Introduction

This pilot project encompassed the development, delivery and evaluation of an innovative cross disciplinary subject, Climate, Sustainability and Society (ENV1CSS) offered across the Bendigo and Albury-Wodonga campuses in semester 2, 2009. Enrolments comprised 84 students at Albury-Wodonga and 92 at Bendigo. The subject was to be a ‘Signature Subject’ of La Trobe University. In the inaugural offering, the subject was compulsory for students enrolled in the first year of Bachelor of Business and Bachelor of Civil Engineering programs and was a core unit in the General Science strand in the Bachelor of Education program. It was also taken as an elective by students enrolled in the Bachelor of Science, Bachelor of Environmental Management and Ecology and Bachelor of Arts programs.

The pilot project was funded through a Special Project Grant of around \$70,000. In addition, the CTLC provided a considerable amount of ‘in-kind’ support in the form of project management, lecturer and tutor training, the media production team and subject evaluation.

In this report we consider the three central aims of the project which were to:

1. Embed, the principles of Design for Learning (DfL) within the curriculum;
2. Explore and define the concept of a ‘Signature Subject’ ; and
3. Expose practice(s) within the University that hinders the effective delivery of similar cross faculty subjects;

The report begins with an examination of the processes, assumptions and decisions that underpinned the design of the subject. We outline the guiding principles, the development of intended learning outcomes and assessment and discuss the role of the reference group and the public lectures. The section includes a description of the evaluation process and some preliminary findings.

In the second section we discuss the concept of a ‘Signature Subject’ and how ENV1CSS can be seen as such. We explore the way in which the creation and running of Signature Subjects creates peculiar financial, staffing and teaching resources challenges.

The final section explores the difficulties that arose primarily through the inter-faculty nature of the subject and the administrative practises that rely on Faculty ownership.

# Designing the teaching and learning experience

## ***Curriculum Design Principles***

Historically, development of the teaching/learning regime begins with the Unit Data Base description of the subject.

In this unit students will examine the environmental challenges besetting contemporary societies and explore the potential for a multi-disciplinary approach to providing solutions. Students are introduced to the basic principles of the scientific, economic and sociological approaches to the study of the environment and its management. Through a problem-based approach that includes both case studies and field work, students develop a recognition and appreciation of the causes and impacts of climate change and the responses of science, society and business. At the completion of this unit students will demonstrate an awareness of the theoretical and practical tools available to bring advanced decision making to environmental management

However, early discussion about the background ideas and orienting principles for teaching about climate change concluded that:

- climate change will, directly or indirectly, dominate the period our students will live through;
- climate change will penetrate their working lives, their lives as citizens (local, national and global) and their private lives;
- climate change research, policy formation and public understanding necessarily involve interdisciplinary collaboration and understanding. Collaboration by scientists, economists and social science experts requires an understanding of collaborators' disciplines and findings to put together the bigger picture;
- there is a vast amount of information available in the public realm. This creates the challenge of recognizing what is current and trustworthy information. Quite properly, climate change is a politically charged issue and, accordingly, it necessary to be able to evaluate sources and distinguish between debate and propaganda.

It was therefore deemed necessary to take a different approach.

## **Agreed Principles**

The initial conception of the unit was reasonably vague and varied across the staff involved. The first step was to work toward some commonly agreed principles. It was agreed that:

- the teaching would model an integrated approach to the issues and that the unit should not be divided into three strict discipline based sections;
- the term "lecture" was to be used for timetabling purpose only. Lectures or presentations may have a place in the teaching but the default position should not be a teacher-focussed lecture;

- there would be three public lectures with a speaker nominated by each Faculty.

Initially it was proposed that the unit would be modelled around broad topics with each discipline using the topic as a backdrop to present/workshop their approach. Topics such as The Murray Darling Basin, Food security, Survival of Red-gum forests were suggested. This idea proved difficult to enact and was abandoned during stage two (alignment of learning outcomes and assessment) in favour of allowing the learning outcomes to dictate the teaching.

### **Learning outcomes and aligned assessment**

The topic “Climate, Sustainability and Society” is extensive and interpretable at many levels. Writing the curriculum through a focus on content only, was unlikely to produce much more than hours of debate. Instead, we turned to the desired learning outcomes. It was agreed that a successful student would be one that demonstrated achievement through:

1. Testing for specific definitions and theory that are used in the debates around climate change.
2. Creating viable and reasoned arguments.
3. Demonstrating these arguments to others by writing for specific media as well as other portfolio materials (presentations, talks, posters, debates etc...)

These outcomes were developed and aligned with specific assessment tasks. Concurrently, we were beginning to map out the syllabus over the 13 week semester which allowed us to determine when the assessment tasks would occur and the degree to which they were either formative or summative. The details of the assessment continued to be adjusted with the development of the syllabus and in consultation with the teaching group. Appendix A presents the final version.

### **Course outline**

We had established that each discipline, being defined as Science, Social Science and Economics, would have one week in which to establish their conceptual framework – the terms, definitions and key concepts that form the basis of the discipline’s approach to climate and sustainability. We had a reasonably clear idea of when the learning outcomes would be developed and the assessment tasks would occur, as well as the likely timing of the public lectures. The next step was to map out a rough course outline with the known and speculated activities in place and the supposed content and staff assigned to each week. From this a week-by-week guide was produced which included the readings and links for the LMS. The final step in preparation was to produce support material for the tutors and a plausible LMS site for the subject, and to refer required electronic items to the library task force who were developing an electronic resource page.

## ***From Principles to Practice***

### **Resources**

#### **LMS**

We made an early decision that there would be one LMS site to be used by both campuses. The management of the site was tricky and students and staff have commented on possible improvements. However the structure of the site was very successful. The homepage was kept simple with minimal number of links. The primary link was to the ‘Schedule by Week’ which is illustrated in Appendix B. As the name suggests, it outlined the content to be covered and the Homework/Readings set each week. From this page there were links to lecture notes, tutorial sheets and readings.

Student evaluations conducted in week 4 and again in week 12 clearly recognise the value of the site.

Week 4 survey ‘... list ways in which the teaching, tutoring and/or the subject design contribute to your learning...’

*“Clear set out of the program, specific tasks are on LMS for students, gives me clear instruction of what needs to be done and what is in the later part of the program”*

*“Lecture notes, resources on LMS ensures all information presented in lectures is readily available”*

Week 12

Focus group A (regular attendees) ‘..does anyone want to say anything about the way the subject was organised, did you find the public lectures useful, the LMS anything about that?’

*“The LMS was structured really, really well and easy to understand and you can always click back when you need it...”*

Focus group B (selective/irregular attendees)

*“I thought the LMS was pretty good like how they had everything up on there so if you missed a lecture or something you could gain access to it ...”*

The discussion board was introduced half way through the semester, with more time it could have been introduced earlier. Some Bendigo groups used the discussion board very successfully for their group case study. Albury-Wodonga students tended to use Facebook or Google Groups for group communication.

#### **Library**

In February 2009, a member of the subject development team met with Jeanette Dazkiw, University Library Bendigo Campus Librarian. She appointed a committee of experienced Librarians and Educational Designers from both the Bendigo and Albury-Wodonga campuses to build a dedicated Library Guide and web site. Regular

collaborative meetings led to the development of a rich site which will be a resource for the subject and for other climate change subjects in the University. The site had over 2000 hits from students enrolled in the subject.

The Library site was given a portal on the LMS main page.

### **Tutor pack**

The tutors were not expected to be an expert in all areas (see Staffing) rather they were asked to facilitate the learning of student groups across a range of disciplines. To support them in this task a “tutor pack” was prepared that consisted of the unit outline, all assessment tasks and readings and an outline of each tutorial for the first seven weeks. The packs were substantial A4 folders and formed an important support for tutors. The use made of the packs probably varied between the tutors.

Comments from the students indicate that they believed tutors were unprepared for what was required of them. Students were unaware of the tutor resource material that had been prepared.

Week 4 survey ‘... (are there) specific aspects of the teaching, tutoring and/or the subject design that make you learning more difficult...’

*“Tutorials need to be more structured”*

Week 12

Focus group A (regular attendees)

*“The tutorials – I found the tutorials could’ve been structured a bit better.”*

*“If they’d maybe been structured, like this is what we are going to do in the tutes but the tutors had actually been given the stuff like a week to prepare that probably would have worked a bit better”*

### **Staffing**

The subject was designed with less conventional teaching roles in mind. Classes were labelled ‘Lecture’ and ‘Tutorial’ only for the purpose of timetabling. ‘Lecture’ referred to the whole cohort of students (on a campus) and ‘Tutorial’ referred to a subgroup of 20 – 25 students. The idea was that, outside of the public lectures, all the learning would be to some extent interactive. We didn’t take into account how intransigent the meanings of ‘lecture’ and ‘tutorial’ are in the repertoire of most academics (ourselves included) or the difficulty in moving beyond these.

Across the University, academic staff members have tended to focus on content and many have a firmly established didactic approach to teaching that is difficult to shift. The design of this subject assumed that lecturers and tutors would easily move to a more interactive, learning centred approach. In hindsight we needed to be more insistent about what was required and to provide on-going support.

There are three clearly identifiable roles for staff involved in the design; coordination, lecturing and tutoring functions (see appendix B). However, these roles were not

clearly specified at the start of the program and this resulted in variations in staff perceptions of their roles and responsibilities.

### **Coordination**

Each campus had a subject coordinator. The role is absolutely essential for the smooth operation of the subject and this function must be assigned to a permanent staff member. While there is scope for increased delegation of tasks than that which occurred during the pilot offering, the coordinator must nevertheless be established as the primary point of contact for each Faculty administration team and for student queries. Furthermore, one of the campus coordinators, at Academic level C or above, should be appointed as the overall subject coordinator with responsibility to liaise with Faculty and University administration on subject design and administration.

In keeping with the implementation of ‘different instances of a subject’ policy, the coordinators from each campus must keep in contact to maintain equivalence of experience.

### **Lecturer**

Lecturers were asked to present an ‘interactive lecture.’ However the interpretation of ‘interactive’ was not well communicated and it was interpreted in a variety of ways. Most lectures did not actively involve the majority of students.

Furthermore the tutorial outlines provided to the tutors began with an exercise to ‘... extract the major concepts covered in lecture, discuss understanding...’ The intention was that the concepts would be provided to the tutors before the lecture. This rarely occurred if ever, and lecturers were more likely to provide the PowerPoint slides or an exercise, thus making the tutor’s role more difficult.

### **Tutor**

Tutors were asked to facilitate discussion on concepts that had been covered and exercises that had been set. Again, the perception of this role varied amongst the tutors and was probably not well communicated to all tutors. At Bendigo this was largely due to last minute appointment of casual staff as tutors. Some tutor training was undertaken but would have been better placed after the tutor roles had been well established and communicated.

### **Future development of staff roles**

We do not shy away from the ideas underpinning the teaching design and required staff roles. However, in future offerings staff roles and expectations of the teaching design must be established well before the start of the teaching period and followed with suitable targeted training. It must be clear that the pedagogical design of the subject is the responsibility of the (campus) coordinator. The coordinator must work with each lecturer on structure of the class and the requirements for the following tutorial. It is then the coordinator’s responsibility to ensure that the tutors are adequately informed and resourced for the tutorials.

### **Assessment**

There were three assessment tasks: 3 Short quizzes completed on LMS, addressing the “need to know” elements of each discipline; a “Webquest” assignment relating to

consolidating information and communicating an argument; a Case Study based on a local government area in the Murray Darling Basin.

### **3 short quizzes**

The on-line quizzes were set at the end of each week in which the definitions and concepts specific to each discipline had been established (weeks 2, 3 and 4). The questions were multiple choice and the intention was that students were free to research the answers through their notes or other texts and references. However this freedom was not obvious to at least some students who reported guiltily that they, or their friends, had 'Googled' the answers. Students quickly discovered ways to share the results. The concept of testing students on-line at the start of the semester was sound but the manner in which the students engage with the task needs further development.

### **WebQuest**

A WebQuest is an assignment in which most or all the information that learners work with comes from the web. In this case the students were provided with a set of web-based resources and were required to address a particular question using only the resources provided and to write their response as an Editorial. Practise WebQuests and Editorial writing were programmed for the tutorial classes for two weeks preceding the due date and information on how to write an Editorial was provided on the LMS site.

In theory the task was well suited to the learning objectives however the format was novel to both the teaching staff and the students. The unfamiliar term 'Webquest' allowed a distraction from the intention of the task and some tutors did not engage sufficiently with the task during the classes designed to introduce and support it. Furthermore, many students failed to take advantage of the tutorial assistance and subsequently had difficulty in fully addressing the requirements of the task.

The task is well matched to the learning objective outlined for the subject, however further development is needed in its presentation and support.

### **Case Study**

One of the early decisions made by the Subject Development Team was to have a case study as a key element of assessment. The discussions that occurred in the process of devising the case study had the effect of clarifying the orientation of the subject and the structure of the curriculum. Accordingly, we decided:

1. That the curriculum and the case study would not be directed towards furthering students' education in their discipline-specific studies. Their degree courses would look after that.
2. Instead, the curriculum and case study would be turned outward to the world and directed towards developing students' capabilities to participate in the debates taking place in the public sphere.
3. In keeping with the interdisciplinary nature of the subject and its orientation to the public sphere, the case study would involve a problem-based project in which students would work, as far as possible, in cross-faculty teams.

4. To build student's capabilities for evaluating information and keeping up with the constantly changing body of information and propaganda, the case study would require students to use a range of web-based sources.
5. The curriculum would be structured to systematically build student's capacity to undertake the case study.

We created a hypothetical broad-based community group that was somewhat baffled by the current debate around climate change and wanted to understand the implications for their community of a range of environmental, economic and social issues. The concerned citizens wanted a synthesis of the current debate and information, in a language ordinary people could understand.

Students were assigned to work in multi-disciplinary groups to share and discuss the information gathered. However each student was required to submit their own report. The group was required to submit a one-page synopsis of their findings that formed the basis of a group poster presentation. The subject was not designed to teach team work skills and students who were unable to collaborate with their nominated group were allowed to submit an individual synopsis and poster.

### **The Poster Presentations and Event**

At both Bendigo and Albury-Wodonga, the students presented their posters at a public event in Week 13 of semester. Members of the University community and the Reference Group were invited to view the posters, question the groups and join the class for lunch. The posters were of very high quality and enabled students to see their group and whole-class achievements. They were demonstrably proud of their collective work and buoyed by the high level of public interest in it. The event was a fitting celebration on which to conclude the subject.

### **Reference group**

The formation of a reference group of industry experts was considered vital to the development of the subject concept, and its relationship to graduate capabilities. In this case, the panel consisted of three members, Dr Tim Clune, Manager of Sustainability and Environment from North East Water, Dr Peter Box, consultant, and Dr Michael Crawford, DPI. In particular, Dr Clune was involved from the conceptual design phase and provided pertinent information on the extent of business and professional activity in the broad arena of sustainability. The reference group reviewed the course outline, and provided input into the development of intended learning outcomes, assessment tasks and other aspects of the course. They identified a number of areas where they had found deficiencies amongst the graduates they had employed.

These included the ability to:

- Work in a multi-disciplinary group
- Synthesise information
- Make recommendations
- Understand public debate and public documents
- Understand the difference between advocacy Vs enquiry
- Understand the perspective of other disciplines
- Frame questions

- Make assumptions
- Provide a considered argument
- Articulate an evidence based argument

While it is recognised that these capabilities would ideally be developed and extended over the entire degree, this subject was developed with these in mind.

The reference group attended the poster presentation in Week 13, and questioned the students both on the content and research conducted for their case study, and on their impressions and opinions about the subject as a whole, and specific aspect of it. For example, they were asked about the public lectures, the group work and the general approach taken.

## **Public lectures**

A central aspect of the subject was the inclusion of a series of public lectures by leading thinkers from each of the disciplines. The aim in including these lectures was to introduce students to the nature of public debate and to highlight the variance in approaches across disciplines. Each lecture addressed issues surrounding climate change and sustainability. In 2009, the lectures were presented by Dr Barrie Pittock, Professor Lin Crase and Professor Clive Hamilton. There was an expectation that all students would attend the lecture and an attempt was made to structure the subsequent classes to address issues that arose. This occurred with a varying degree of success with the main difficulty arising through limited time between confirmation of the speaker and preparation of the class.

The inclusion of public lectures enhanced the experience of the subject for the students in a number of ways. The public lectures provided an opportunity for students to join with community members, and to witness the role of a university in bringing debate to the community. Several students commented that they did not know that people even went to such events, or that the university ran a series of public lectures each year. In this sense, immersing students in this more public form of debate opened their eyes to the potential offerings of the university in a manner that extended beyond the class room. Several students, accompanied by family and friends attended other public lectures that were offered by the university.

In later sections of this report we re-visit the role of the public lectures in relation to Signature Subjects and difficulties that arise in relation to funding and the University's organisation.

## ***The Evaluation process***

The evaluation process consisted of three separate tiers; evaluation of the pilot project; evaluation of the subject and evaluation of student learning.

### **Evaluation of the pilot project**

Information relating to the pilot project itself was been gathered through an email survey of all staff involved in any aspect of the project. This included, but was not limited to those involved in teaching, coordination, organisation of the public lectures

and media relations. The intention in doing so was to gather data on the elements of the project that worked effectively, and to identify impediments to the development of similar cross faculty initiatives.

More specifically, participants were asked the following questions in an email format. This survey was administered by the project manager.

1. Please describe your involvement with respect to this project.
2. Please list 2-3 specific things that have gone well with respect to your involvement in this project.
3. If there are specific aspects of this project and aspects you've been involved with that didn't seem to be as successful, efficient or effective as you'd like, please list the 2-3 most important ones.
4. Please suggest 2-3 specific, practical ways in which the development of this type of project could be improved.
5. Other comments or observations.

In depth discussions with the co-ordination group augmented data gathered from the survey.

### **Evaluation of the subject**

Evaluation of the subject was on-going and drew on data collected from the co-ordinators, teaching group, reference group and students. The teaching team was surveyed via email in Week 5 in an effort to enable adjustments where necessary and feasible. The aim in this phase of the evaluation was to identify the positive and negative aspects of the subject design and delivery in relation to teaching. The survey questions appear below.

#### **Survey of teaching team**

- Please list 2-3 specific things that are going well with your teaching or the support you have for your teaching in ENV1CSS.
2. If there are specific aspects of your teaching, the subject design or the Faculty/University support for ENV1CSS that don't seem to be as successful, please list the 2-3 most important ones.
  3. Please suggest 2-3 specific, practical ways in which the subject coordinators, Faculty or University could assist your teaching.
  4. Is there anything else you want to say right now?

#### **Survey of students**

The perceptions of students were seen as an integral part of any evaluation of the subject. Accordingly, this part of the evaluation consisted of three phases.

The first of these occurred in class in Week 4 and was designed to secure timely feedback to enable any adjustments to the subject deemed necessary. Students completed a short survey of open-ended questions and these were returned to the CTLC for collation. The questions focussed on student perceptions of their own learning and

the extent to which the various elements of the subject were aiding or hindering this learning.

1. Ways in which the teaching, tutoring and/or the subject design contribute to student learning.
2. Aspects of the teaching, tutoring and/or subject design that make learning more difficult
3. Aspects of this subject that make students anxious?
4. Ways in which this subject could help students improve learning.

This was followed within the fortnight by a tutorial exercise in which the students were required to focus what they did themselves to support their learning.

The second phase occurred in week 12 whereby the CTLC facilitated focus groups with the purpose of discussing student engagement in the subject. In Bendigo two focus groups were convened, one comprised of ten students who had attended class quite regularly (Focus group A) and one consisting of four students who had been identified as 'selectively engaged' (Focus group B) in an effort to gather data pertaining to the reasons for student non-attendance. In Albury-Wodonga, one focus group of ten volunteers was conducted (Focus group A). The broad plan of these focus group questions appears below.

#### **Focus group A: (Bendigo and Albury-Wodonga)**

Consider the total experience – 3 Public lectures, Weekly lectures/classes with full class, tutorial classes, LMS, group work, guest lectures and assessment.

We are interested in how your participation in the subject contributed to your learning.

- \* Did the overall organisation of the subject support your learning? In what way did it support or fail to support?
- \* Was there any part of the structure that did not engage you? If so, should it be revised (if so, how) or excluded?
- \* Should this subject be mandatory for your course?

#### **Focus Group B: (Bendigo-selectively engaged)**

What does it mean to learn?

Consider the total experience that you have had in these subject– 3 Public lectures, Weekly lectures/classes with full class, tutorial classes, LMS, group work, guest lectures and assessment

We are interested in what influenced your engagement with the subject and how selective engagement influences your learning.

- \* What influenced your attendance / nonattendance in the various classes?
- \* How did your selective attendance influence your learning?
- \* Is there some way in which this (and other) subjects could be better structured to support selective participation so that you can better manage your learning?

A summary of report from the focus groups is attached (Appendix D)

### **Evaluation of student learning**

Base line data on students' attitudes to, and knowledge of, climate change was collected in Week 1, and an identical test was conducted in week 12. Student performance against intended learning outcomes was gauged by assessment tasks.

The Student Feedback on Subject Survey (SFSS) in which all students were given an opportunity to reflect on the subject, the teaching and their learning was also undertaken in week 12. The survey was run separately at each of the campuses. The results from these surveys show an interesting dichotomy in student opinion, ranging from a significant number of students who thought very highly of the subject to a significant number who ranked it very poorly. Arising from this, the most obvious issue that will need to be addressed at the next offering is the student's perception of the relevance of the subject to their course of study. Given both the compulsory nature of the subject and the emotive nature of the material being discussed, it is imperative that students understand why they are required to undertake the subject and why the University sees it as a Signature Subject.

Finally, there were a number of ad-hoc discussions with students and student groups that revealed further data on students' perceptions. During the poster session at Albury-Wodonga, the reference panel questioned students using open-ended questions about their general experience of the subject. These findings generally support a number of themes that have been echoed throughout the continuing evaluation of the subject, including; concern about the timetabling of a four hour block; need for a stronger link between lectures and the case study; need for more structured tutorials. On the positive side, students reported that they valued the opportunity to learn a little about other disciplines, with one noting 'I can now see how everything is connected and that you can't solve complex problems with a single approach'. One panel member noted that the students' posters and presentation showed that the objectives of the subject had been met.

Overall, the evaluations provide a rich source of information which will be analysed in greater depth when time permits. Preliminary analysis of these data reveals overall satisfaction with the structure of the subject and the multi-disciplinary nature of both the teaching and the learning environment. In general the areas that need improvement concerned issues that are adaptable (eg: students commonly complained about the four hour block). The lack of an exam was a polarising factor, which some students saw as a positive and others as a negative. There were some issues that were campus specific such as concerns about the LMS site being a common complaint at Albury-Wodonga, and the 'biased' nature of the subject being of common concern to the Bendigo cohort. There were many comments that illustrated that the students' perceptions were different from the intent of the coordinators. For the most part this can be dealt with through better communication.

## **Summary and recommendations in relation to the design of teaching**

Overall, the design of the subject ENV1CSS was successful and we do not recommend significant changes to the essential features or the structure. However there is room for modifications in the presentation, the assessment and the staffing.

We recommend that the subject maintains:

- the interdisciplinary approach established;
- the assessment regime with some minor modifications;
- a reference panel;
- three public lectures each one presented at a different campus and connected by live video link to the other campuses.

In future offerings we intend to:

- improve the focus on the development of the program as groundwork for the case study;
- confirm the speakers and dates of the public lectures six months ahead and integrate the subject of each public lecture into the curriculum;
- establish the roles of staff and the requirements and expectations of the various roles before assigning staff;
- require staff to undertake the 3 Day effective teaching strategies course and relevant training in facilitation;
- require that the overall subject coordination is undertaken by a permanent member of staff at academic level C or above;
- require that each campus (instance) of the subject is coordinated by an on-going or fixed contract academic at level B or above;
- require that campus coordinators collaborate closely to ensure compliance with different Instance of a Subject Policy;
- require that teaching staff at each campus meet on a weekly basis with the campus coordinator.

## **A La Trobe Signature Subject**

### ***What is a Signature Subject?***

Climate, Sustainability and Society has been described as a “La Trobe Signature Subject”. Despite being given prominence in several places, we have not been able to find a definition of this term (always capitalized) in any of the key documents concerned with curriculum reform. It seems to be a concept in search of a definition and meaning. However, the *La Trobe University Operational Plan 2010*, “01, Curriculum, Teaching and Learning”, 1.6, commits itself to the task of developing “at least five new cross-Faculty, multi-campus Signature Subjects for 2011 implementation.” To support this, the CTLC has called for expressions of interest for projects to design and trial materials for multi-faculty, multi-campus Signature Subjects.” This commitment makes the task of working towards a definition an urgent one.

It seems to us that while a cross-Faculty and multi-campus character is a necessary condition for a subject to be a Signature Subject, it is not a sufficient condition. The use of the metaphor of “the signature” indicates that the University intends that such subjects will clearly and vividly represent the distinctive identity by which it is recognized by its students and the wider society. This sense of a “La Trobe identity” is made explicit in the key planning and strategy documents. We will draw on this to attempt a definition of a Signature Subject.

Accordingly, we define a Signature Subject as having a curriculum which has many or all of the following characteristics:

- a curriculum embodying Design for Learning principles;
- reflects some or all of the “core institutional values” defined in the LTU Strategic Plan 2008 – 2012 [p. 7]: responsibility, relevance, critical enquiry, integrity, participation, excellence.
- is engaged with one those key issues, identified in the University’s Green and White Papers, which will shape the coming period: climate change, globalization, inequalities, and the circumstances confronted by Indigenous Australians;
- has an interdisciplinary character demanded by the real world complexity of the issues themselves;
- has an interdisciplinary character because practical action directed to addressing these issues will require people to know how to work in interdisciplinary teams;
- has a public face of some sort, such as: engagement in the public sphere through community education or public debate; engagement with disadvantaged community groups; internships; or simply through the capacity to generate public interest and media attention.

If this is on the right track, Signature Subjects are inter-Faculty because they are interdisciplinary, and multi-campus because they represent something relevant to the identity of the University as a whole.

It is worth noting that The Green Paper, in Recommendations 12, 13, & 14, identified climate change, globalization, inequalities and Indigenous Australia as issues which should be required to be embedded in the curriculum content of all disciplines and programs. They were seen as essential elements of a “general education” which prepared students for the rapidly changing world in which they will work and be citizens. These recommendations proved controversial largely because they were seen by many staff members to be in competition with discipline-focused and vocational education. In the White Paper these core elements of a “general education” were watered down from “requirements” to curriculum aspirations which the University would support and encourage. Signature Subjects are potentially a vehicle through which such aspirations could be realized.

By the above definition, ENV1CSS is clearly a Signature Subject.

## ***The public profile of a Signature Subject***

In this section, we will focus on the aspects of ENV1CSS which concern its public face. It will become apparent that the financial, workload and expertise costs have to be recognized calculated and apportioned appropriately.

### **The Public Lecture Series**

The subject Climate, Sustainability and Society included a series of three public lectures presented by leading thinkers concerning issues surrounding climate and sustainability. In 2009 lectures were given by Dr Barrie Pittock, Professor Lin Crase and Professor Clive Hamilton. The lectures were well attended at both campuses, including the video-conferenced instances. Community response to the lectures was very positive and attests to the relevance of the issues of climate and sustainability to wider society. Media coverage was good, with radio and newspapers interviewing the speakers.

### **Production of a DVD**

In collaboration with the CTLC's Flexible Teaching and Learning section's Media Production Team, the Public Lectures were filmed, edited and put together on a two-DVD kit. The CTLC team were able to create a product with very high production values: multiple cameras, expert editing, improvement of the quality of the graphics in speakers' Powerpoint slides, design of the DVD cover-slick and label. The CTLC team were generous with the time they were prepared to put into collaborative work with the CSS Development Team to ensure that the final product was of very high quality.

Copies of the DVD will be sent to all the "hot" and "warm" feeder schools of the participating campuses. Copies will go into all campus libraries and contribute to building a resource base for teaching climate change related subject across the University as a whole.

The DVDs of the public lectures are now part of the University's library collection and form part of the resource base for ENV1CSS and other subjects concerned with climate and sustainability.

### **The Web-based profile**

The video versions of the public lectures given by Clive Hamilton and Lin Crase are on the SlowTV web-site and on iTunesU. This has allowed a huge extension of the subject's public profile and contributed to the University's identity as a major player in public debates on these issues.

## ***Summary and recommendations in relation to Signature Subjects***

The University, probably through the CTLC, needs to create a comprehensive statement about the purpose and nature of Signature Subjects and their place in the whole curriculum. As a contribution to this process, we make the following recommendations:

- that the nature, purpose and expectations of Signature Subjects be clearly articulated;
- that Signature Subjects be vehicles for general education and focus on complex real-world concerns such as those identified in Green Paper

Recommendations 12, 13, & 14: climate change, globalization, inequality, Indigenous Australia;

- that the meaning of the concept, Signature Subject, be articulated clearly in time to assist those teams which will be developing the five new Signature Subjects for implementation in 2011 and those undertaking the supporting CTLC projects;
- that a central University repository is established for information about planned public lectures or similar events to avoid duplication;
- that processes and procedures to facilitate cross-faculty and cross-campus events of this type are developed;
- recognition is given to the fact that Signature Subjects are more expensive to run than standard subjects and develop an appropriate budgetary model for costing and financing.
- recognize that the coordination and teaching of Signature Subjects is very labour-intensive and build this into the University workload calculation models;
- determine in advance financial arrangements across Faculties;
- filming future ENV1CSS public lectures.

## **Cross Faculty barriers**

There are three major impediments to innovative cross faculty subjects that the University needs to address.

1. Funding
2. Unit data base and subject ownership
3. EBA and workplace expectations

The first two impede the collaboration of faculties. The third, although exacerbated by multi-faculty involvement, is more of a difficulty that affects the changing of teaching practice.

### ***Funding***

In designing and presenting Climate, Sustainability and Society in 2009, we made a deliberate effort to disassociate ourselves from funding and EFTSL concerns. Unfortunately this was not easy. Faculties operate under financial pressure, and every budgetary unit is mindful of their own bottom line. Put simply, financial arrangements bring with them a particular set of incentives which are not necessarily aligned with the intent to foster enrolments in cross faculty offerings. Ostensibly, there exist two basic funding models. Funds could be allocated according to which faculty contributed to the teaching. This model was, as a matter of pragmatism, adopted in 2009. It resulted in the funds generated being split evenly between FSTE, FLM and FHSS. However, this funding model is attended by the disincentive for faculties to encourage their students to enrol in the subject. It is possible that a faculty that taught one third of the subject but had no students enrolled, could also keep the EFTSL from their students by enrolling their students in other subjects offered by their own faculty. The other two faculties, having encouraged their students to enrol, would 'lose' EFTSL from their faculty's own subjects. An alternative funding model would allow funding to follow the student, and would provide faculties with the incentive to enrol

their students in the cross faculty offering but to not teach into it, thereby receiving the income but not bearing the costs. The 2009 arrangement relied on goodwill between and within Faculties and the sort of collaboration that is easier to achieve on the smaller regional campuses. For ongoing cross-faculty subjects an acceptable solution to the funding issue must be established.

The funding debate was further complicated with the public lecture series that extended across campuses. Despite the many positives that accompanied the public lecture series, the organisation and coordination of these events presented several non-trivial challenges.

First, public lectures are traditionally sponsored and organised either by Faculties or by campuses, and clear processes are in place to ensure their smooth operation. However, in this case, we were dealing not only across campuses, but also across Faculties, leaving a number of grey areas where responsibility was poorly defined. Ultimately, this led to duplication or omission. Coordinating staff 'trod a fine line' to avoid cutting across others' professional domains, whilst remaining sensitive to the added workload that attended these 'extra' events. Whilst staff members at both campuses were very helpful, future events must be accompanied by a clear set of processes and delineation of roles and responsibilities.

Second, an associated issue relates to the funding of these events, with some angst caused by Faculty's budgetary concerns. These issues require resolution prior to further iterations of this subject.

Finally, organisers of this series were dismayed to discover very late that the first invited speaker, Professor Tim Flannery, had been invited by the University to participate in a similar event in Bundoora. The confusion that arose necessitated the last minute arrangement of an alternative speaker, and resulted in embarrassment. Subsequently the third speaker, Professor Clive Hamilton was involved in a similar Bundoora based event.

A further concern centred on the labour intensive model of teaching that this subject required in 2009. This was largely a result of the limited time available to prepare for the subjects and the uncertainty of both student numbers and staff availability. The enrolments eventually settled to roughly 150 students and the subject was staffed each week so that five academic staff (lecturers and tutors) were present at all class times on each campus. This is not considered sustainable, nor is it considered necessary for future offerings. An alternative model is being investigated.

### ***Unit data base and ownership***

There are two related issues to discuss in relation to subject ownership. The first issue to consider relates to the way subjects are described within the unit data base and the second relates to the rights and responsibilities that are attached to 'owning' a subject.

Currently a subject exists by way of it being described in the unit data base. The unit data base describes subjects through their content and the 'word equivalent' assessment. The design of the teaching and learning therefore began with specified content but not specified learning outcomes. We note this as a problem for innovative teaching design but believe the issue is already being considered in the Design for Learning implementation strategies.

Further, La Trobe arranges subjects so that Faculties, and in some cases disciplines, 'own' subjects according to the subject code assigned. This code also determines the funding attached to the subject. The subject code for Climate, Sustainability and Society has the prefix ENV which designates it as belonging to Science and accords it significant income. Whilst this is not a seemingly significant problem, it does interfere with cross-faculty cooperation. The Faculty that owns the subject has both the responsibility and the power to revise and update the curriculum without any call on courses within other faculties for which the subject may be core. The reporting of student quality assurance surveys can be fed through a specific discipline and faculty, again without recourse to programs in other faculties.

If the University is to develop a number of cross-faculty Signature Subjects then these subjects should be managed by a central area such as CTLC.

### ***EBA – workplace expectations***

In Climate, Sustainability and Society we attempted to present a subject in a manner different to the conventional didactic lecture and tutorial regime. Alternative teaching methods can, with goodwill, be negotiated with permanent academics and somewhat accounted for in their workloads. However the inaugural offering of this subject relied on the employment of sessional staff, and is likely to continue to do so, at least on regional campuses. In an effort to cover the flexible nature of the teaching and unknown contingencies that may have arisen, we employed the tutors in what we considered a generous arrangement that had been negotiated with each Faculty involved. A query with regard to marking expectations by one tutor, led to the involvement of the union and a requirement for strict interpretation of the EBA agreement and an inability to negotiate our intentions in regard to teaching methods and expectations of tutor roles. Strict interpretation of the EBA (even the new one) does not favour tutors undertaking the style of teaching we required. The combination of the union official not understanding the teaching regime and at the same time requiring that we did not discuss the issue with the tutor, together with the need to negotiate employment conditions with three faculties on two campuses, was fraught and the issue interfered with the subject design and was never satisfactorily resolved. Following this experience we should be able to avoid similar circumstances in future offerings of the subject. However without careful consideration of roles and expectations difficulties will continue to arise whenever innovative teaching design relies on flexible teaching arrangements.

As a result we recommend that, as the Design for Learning is implemented and teaching becomes innovative and more interactive, there must be a concurrent development in the definition of the roles and the associated remunerations for sessional staff.

### ***Summary and recommendations in relation to cross-faculty teaching***

#### **Changes to University procedures**

We suggest that the University:

- forms a working group to investigate and recommend a funding model that does not discourage Faculties from either teaching or enrolling their students in subjects of this type;
- investigates the possibility that subjects of this type be coordinated from a central point (e.g. the CTLC), rather than being seen as ‘owned’ by one Faculty, and that reports pertaining to quality assurance be reported through such a central point;
- establishes and publicises a central repository for information about planned public lectures or similar events to avoid duplication and develop processes and procedures to facilitate cross faculty and cross campus events of this type. These processes are in place at a campus level, but coordination and clear delineation of responsibility is required;
- investigates the possibility of ‘piggy backing’ this series of lectures on other established public lecture events. (eg. Jonathan Mann lecture at Albury-Wodonga and the Quick lecture at Bendigo);
- investigates the potential for other subjects to include exposure to public lectures
- forms a high-level working group to identify the blockages to Signature Subjects (and to many of the non-traditional teaching practices promoted in "Design for Learning") and the EBA.

Furthermore, for the development of further cross-faculty Signature Subjects, we recommend:

- that the unit data base description of a subject should specify learning outcomes and aligned assessment (rather than content description and word limited assessment);
- that the University must address the various nuances in University policy interpretation (e.g. Special consideration; applications for extension).

## Concluding Remarks

ENVICSS was a success and an endorsement to the curriculum innovations to which the University has committed. Participation in this pilot project has been a challenging, invigorating and, at times, an exhausting process. The time lines were too short, and the fact that the subject was actually offered in semester two was in large part a testament to the extraordinary amount of good will that surrounded its development and delivery. It is our firm hope that the lessons learnt from this project will enable others to undertake similar cross faculty projects without facing some of the obstacles that we faced.

With the intention of shedding light on the processes and pit falls in designing and delivering a cross faculty subject, we have divided this report into three key sections. Firstly we have described the process of designing the teaching and learning experience. Secondly, the concept of a Signature Subject has been investigated and defined. Thirdly we have identified barriers to projects of this type.

We have noted that the University has begun the process of development of further Signature Subjects by calling for expressions of interest.

The successful development of other Signature Subjects will be facilitated only through careful attention to the lessons from this project. Impediments to cross faculty subject design and delivery predominantly relate to funding and subject 'ownership'. These impediments require urgent attention, lest the development of similar subjects be unnecessarily complicated and costly. The institutional nature of these barriers means that they can only be addressed at the University level, and more work is required on this front.

The authors of this report are particularly concerned about a major contradiction between the University's strong commitment to Signature Subjects and the vulnerability of such subjects to staffing exigencies and resource provision. Currently the office of the DVC and the CTLC, are driving these innovations yet the resources to carry them to fruition are in the hands of the Faculties. Faculties, Schools and Programs have a staffing profile shaped by their traditional obligations. Signature Subjects on the other hand, are dependent on people with appropriate expertise, available time and the goodwill to undertake such work. Furthermore, Deans and Heads of Schools must have the capacity to deploy them. If a Signature Subject fails to live up to expectations it will do so in a public way.

## Appendices

### Appendix A – Learning outcomes and aligned assessment

1. Develop a vocabulary of contemporary definitions and theories relating to climate, sustainability and society.

15% 3 short tests – on LMS, completed by week 4.

*Why:* Develop credibility and jargon within and between disciplines

*Skill:* Synthesis of information

*Note:* It is acknowledged that this beginning phase is designed to develop fundamental (rote) learning with unfamiliar materials

2. Synthesise provided information and deliver a reasoned view.

15 % Webquest – write in specific genre (editorial, ministerial brief...)

*Why:* Consolidate & anticipate argument as well as convey meaning to a target

*Skill:* Specific writing genre – precise and concise – articulate brief response to questions in the public eye

3. Recognise and use the semantic base from each of Science, Social Science and Business to undertake a Case Study.

Part 1 – Develop a topic plan and reading log  
(Individual work)

*Why:* feedback on analysis and planning for the case

*Skill:* Synthesis – writing for a genre – reporting, numeracy in simple analysis of data, develop capacity to respond to criteria

Part 2 - Final case study:  
(Individual work) Structured report that addresses Community Brief  
(Group work) Synopsis to form basis of poster

*Why:* Collate and synthesise material for a defined audience

*Skill:* Group work, analysis and synthesis of a broad array of information developed for multimodal communication

Part 3 - Poster + oral defence  
(Group work)

*Why:* develop capacity in spontaneous questioning

*Skill:* Oral communication and graphic skills in conveying meaning via graphs, images, text boxes

## Appendix B - LMS Schedule by week

Week	Content	Lectures [pdf]	Tutorials [pdf]	Homework/Readings
1	Introduction to unit 'Climate change' and related concept	<a href="#">Albury Wodonga</a>  <a href="#">Bendigo</a>	<a href="#">Keeping a log book</a>	<p>1. Background 1<sup>st</sup> Public speaker – Barrie Pittock; Who is he? With what authority will/does he speak on Climate, Sustainability and Society?</p> <p>2. Find and read "<a href="#">Introduction to the atmosphere - Causes of Climate Change</a>"</p> <p>3. Find and print "<a href="#">CSIRO, Climate Change: the latest science</a>, 16 March 2009.</p> <p>4. Look at the <a href="#">IPCC</a> site: What do the initials stand for? Who are they? What was the date of their last report?</p>
2	Tuesday 4 <sup>th</sup> August 6.30pm Dr Barrie Pittock Climate and weather, causes of change Science of greenhouse effect Chemistry of atmosphere and oceans Modelling climate, interpreting results Science, understandings and predictions Cycles in nature	<a href="#">Public lecture</a>  <a href="#">Albury Wodonga</a>  <a href="#">Bendigo</a>	<a href="#">Interpreting graphs</a>	<p>1. Complete the <a href="#">Global Comparisons exercise</a></p> <p>2. Watch "The Great Global Warming Swindle" and following panel discussion ( available on the Library site)</p> <p><b>Science Test (Closes 5PM Monday 10<sup>th</sup> August)</b></p>
3	Defining modern society  Causes of change in society  Cultural values, influences that set or change them  Effect of climate change on cultural values	<a href="#">Albury Wodonga</a>  <a href="#">Bendigo</a>	<a href="#">Hansen paper</a>  <a href="#">Bryce response</a>	<p>Read the 2005 Jonathon Mann Memorial Lecture - <a href="#">Managing the Environmental Health of the River Murray: an economic perspective</a></p> <p><b>Social Science Test (Closes 5PM Monday 17<sup>th</sup> August)</b></p>
4	Scope and method of economics  Relevance of economics to sustainability  The language of the economist	<a href="#">Albury Wodonga</a>  <a href="#">Bendigo</a>	<a href="#">Tutorial Sheet-aw</a>  <a href="#">Economics basics</a>	<p>1. Print and read the <a href="#">MDB Fact Sheet</a>.</p> <p>2. Watch the ABC program on the MDB "Buying back the River" or read the transcript (both available on the Library site)</p> <p><b>Business Test (Closes 5PM Monday 24<sup>th</sup> August)</b></p>
5	Tuesday 25 <sup>th</sup> August (A/W), Wednesday 26 <sup>th</sup> August (Bendigo), 6.30pm Dr Lin Crase  Allocation of resources Role of government vs market ,Concept of value, Modern Society's dependence on water, Water and culture	<a href="#">Public lecture Paper :</a> Contradictions and Challenges of Australian Water Policy <a href="#">Slides</a>  <a href="#">Albury Wodonga</a>  <a href="#">Bendigo</a>	<a href="#">Public lecture Questions to consider</a>  <a href="#">Webquest exercise</a>  <a href="#">To write an editorial</a>	<p>Completion of reading log and practise Webtask.</p> <p>1. Revisit <a href="#">CSIRO, "Latest Science"</a> presentation and re-read Section two on Australian climate change.</p> <p>2. Familiarise yourself with the climate modelling and scenarios on the "<a href="#">Climate Change in Australia</a>" site</p> <p>3. Read "<a href="#">The Nature and Value of Australia's Ecosystem Services: A Framework for Sustainable Environmental Solutions</a>"</p>
6	Water cycle, Concept of an ecosystem , Consequences of interfering with the water cycle, Accounting for the environment	<a href="#">Albury Wodonga</a>  <a href="#">Bendigo</a>	<a href="#">Natural Assets paper</a>  <a href="#">MDB- Map of LGAs</a>	<p>1. Read the <a href="#">Climate Change in Victoria : 2008 Summary</a> Think about how it applies to your town or LGA.</p> <p>2. Listen to (or read the transcript of) the ABC Background Briefing program "<a href="#">The Great Disruption</a> "</p>

7	Society and ecosystems, Water flow, Measurement, Pipes and pumps, Evaporation, Engineering the environment – effects on society	<a href="#">Albury Wodonga</a>  <a href="#">Bendigo</a>	<a href="#">Tutorial Sheet</a>	1. Go to the <a href="#">Victorian government's climate change</a> web site. Follow the links to the “Climate Change Green Paper” and the “Additional resources fact sheets” . Print off and read the fact sheet for Local government.  2. Go to the “ <a href="#">Find Your Local Council</a> ” site and print off and read the profile of your town / LGA.  <b>Webquest Assignment due Friday 11th September</b>
8	Water - Global issues  How will global climate change affect regions in Australia  Level of citizenship  International and intergenerational equity	<a href="#">Albury Wodonga</a>  <a href="#">Bendigo</a>	<a href="#">Clive Hamilton-Hazelwood</a>	1. Development of Reading log  2. Background next Public speaker – Clive Hamilton; who is he? With what authority will/does he speak on Climate, Sustainability and Society?  3. Visit the <a href="#">Australian</a> and <a href="#">State</a> Electoral commission sites and identify the state and federal electorates relevant to your town / LGA: which party holds those seats now, is it normally Labor, Liberal, Nationals, Greens or a swinging electorate?
9	<b>Wednesday 23rd September 6.30pm</b> <b>Professor Clive Hamilton</b>  Governance  • Legislation  • International agreements and targets	<a href="#">Albury Wodonga</a>  <a href="#">Bendigo</a>	<a href="#">Tutorial Sheet</a>	Consider adaptation/mitigation of climate change  Read the Wikipedia entry on geo-engineering  <b>Case Study Part 1 due Friday 25th September</b>
10	Climate change: Engineering a solution		<a href="#">A changing climate of opinion</a> - Document from webquest about re-engineering the Earth.	On-line exercise: Check out the sites of the <a href="#">Mount Alexander</a> , <a href="#">Bendigo</a> and <a href="#">Geelong</a> Sustainability Groups. Do these provide any clues for how to advise your town / LGA group about how to keep up with knowledge and advice?
11	Climate change: The Economic solution, Carbon trading			
12	Addressing the seemingly obvious: Redistributing water from the flooded north Queensland to drought stricken Victoria			<b>Case Study Part 2 due Friday 23rd October</b>
13	Conclusions and presentations			<b>POSTER Presentation and submission</b>

## **Appendix C - Roles and Responsibilities facilitating learning**

### Student's Learning - Point of View

#### Requisites:

Tutors – in concert with the ‘Tutor’s Handbook’:

- Desire to lead students to various ways of learning
- Accept different styles of learning, temperament and inhibitions / exhibitions
- Motivator – speculator and articulator of differing views – summarizer
- Be a moderator of debate and argument
- Be a resource for vetting appropriate materials
- Offer guidance in securing a view point and verifying credible argument
- Demonstrator of various technologies to access and present information (eg the LMS, use of databases – search engines through to use of MS Publisher).

Lecturers:

- Presenter and authority of fact / accepted knowledge as well as future directions in a domain AND integrator of external domains / disciplines. [eg. Science integrates Social Science / Economics etc]
- For each domain, model the professional base and semantic vocabulary to be used

Coordinators:

- Ensure a secure and safe (equitable) learning environment for all participants
- Manage the learning space (physical and virtual) and time – 4 hours of dedicated workshop / lecture / tutorial and activity.
- Combine to administer and professionally present 3 guest speakers (and the interface between topic and student)
- Articulate outcomes (describe what a successful student will be capable of after the subject’s end point)
- Manager of activities / assessments as a vehicle for motivating and guiding student learning (process for acquiring skills, understanding and knowledge in the multiple domains of the subject)
- Maintains balance on the C to P continuum (Content to Process continuum – ie. the value adding of knowledge / transformation of knowledge to other purposes). Bridge between tutors and students on the C to P continuum.
- Continue appropriate media resourcing and administration of the LMS

### University's Point of View

#### Requisites:

Lecturers / Coordinators and Tutors

- Accept that the confluence of disciplines yields greater synergy than a single domain for the purposes of resolving or understanding complex problems
- Build and renew resources to maintain contemporary look and feel of the subject
- Manage the selection and training of experienced and appropriate tutors as well as ensure skills are developed to maintain a positive learning environment.
- Manage the process of student learning with the assistance of tutors in the various domains as well as in skill development – especially communication, teamwork and analysis / creative problem solving.
- Develop within students their capacity to develop and substantiate an informed viewpoint and argue or qualify their stance in a well reasoned way.
- Work in concert in a collegial co teacher team locally and between campuses to ensure that standards are met, student outcomes are achieved and evaluation is actioned.
- A systemic and enduring approach to subject delivery must be used so that staff changes are administered through defined documents like the ‘Tutors Handbook’, assessment guide and outcomes statements. A change should not reflect an individual’s own world view / opinion or theories or how the subject should be conducted, assessed and evaluated .
- Interpret and respond to evaluation principles

*A function of this subject is to prepare students for learning at university.*

## **Appendix D – Focus Group Report for ENV1CSS**

Focus groups were conducted with students at Bendigo & Albury-Wodonga on 23 October and 21 October 2009 respectively. In both cases we attempted to convene two groups of students, one of active participants (Group A) and one group of students who participated selectively (Group B). These students were nominated and invited to attend the focus groups by the coordinators in each campus. As may be expected attendance for Group B was less than Group A and in Albury-Wodonga no one from Group B turned up. Group A contained a total of 20 students with all faculties besides Health Sciences represented. Group B contained only 4 students and represented students studying Engineering and one student pursuing combined Engineering/Business. There was no discernible difference between the students in Group A from each campus and so we report those responses together. Students were asked to comment on their experience of the subject reflecting mainly on the course structure.

### Group A (Bendigo & Albury-Wodonga)

#### **1. Did the overall organisation of the subject support your learning? In what way did it support or fail to support?**

Many students commented on the difficulty the four-hour block of classes posed for them. In the main the concerns cited were about the challenges of maintaining concentration for an extended period, but some students felt restricted by not having time between lectures and tutes to allow for processing the subject. The exception was part-time students who found block delivery to be a very streamlined approach.

The LMS was really well organised, especially the division of the discipline areas, however there was some concern that lecture notes were not always available on the LMS 24 hours prior to the class.

Students stated that they liked the division of the subject into different disciplines. However, some students felt they were at a disadvantage by not knowing some of the terminology used by lecturers from other disciplines. There was some concern that tutors focussed too much on the viewpoint of their own discipline. This was seen to advantage students who had a background different to the tutor. Some students suggested that they would have liked to have tutors rotated similarly to the lecturers.

Students mentioned the assessment in supporting their learning. Amongst this group there was a great deal of appreciation that the assessment did not include an exam. Completing work over the semester allowed for a steady accumulation of marks through the tests, WebQuest and case study, however, some students described receiving different instructions from different lecturers about the assessment tasks.

#### **2. Was there any part of the structure that did not engage you? Should it be revised (if so, how) or excluded?**

The comments here tended to focus on the specifics of the assessment tasks associated with ENV1CSS. There were some comments about the allocation of marks for the main case study assignment. Some students felt that for a group assignment there was too great a proportion of the marks awarded individually. This did not provide

sufficient incentive to work effectively as a team. In addition most students did not see the relevance of the poster.

There was some frustration expressed about the journal task. Students felt that this task would have had more relevance if the case study area was revealed earlier in the course enabling them to collect news clippings, and materials throughout semester.

Most of these students attended and enjoyed the public lectures but they did not find them particularly beneficial in terms of completing the subject.

### **3. Should this subject be mandatory for your course?**

While most students enjoyed the subject they did not agree that it should be mandatory unless it fitted in with the rest of the program. This was especially true amongst the students who did not accept climate change.

#### Group B (Bendigo)

##### **1. What influenced your attendance / non-attendance in the various classes?**

There is only a small sample of students in this group and in the main the factor which influenced attendance was the timing of the classes. While the four hour block was an overwhelming impediment to some, other comments seem to indicate that the day of the week this class fell upon (Friday) was a more serious obstacle to their participation. These students were more likely to attend the tutorial/practical part of the class as there was sense that missed lectures could easily be caught up using the copies of the lecture presentations provided through the LMS. The tutorials were also seen to provide the most directly relevant information for the completion of assessment tasks.

##### **2. How did your selective attendance influence your learning?**

These students adopted a very strategic approach to their attendance citing efficiency as the most significant influence on their attendance. They were primarily concerned with passing the subject and conserving their study energies for the more difficult Mechanics of Solids subject. They were more likely to attend a class that was interactive and directly linked to assessment. Due to their selective attendance this group experienced little of the group work component of the case study. These students tended to work independently.

##### **3. Is there some way in which this (and other) subjects could be better structured to support selective participation so that you can better manage your learning?**

In contrast to Group A this group of students showed a preference for examinations over group work and written essays / reports for assessment. They indicated that studying for an exam was more time efficient and much less demanding than assignments.

Breaking up the four hour block mode into 2x2 hour sessions would likely increase attendance.

We also tried to determine what these students thought learning was. In much of their commentary they focussed on efficiency of delivery and assessment and all of these students said they were just aiming for a pass grade. Even with their selective engagement all of these students agreed that they learnt a lot in this subject. The interdisciplinary approach allowed for students to gain a deeper understanding of the issues around climate change and sustainability. These students reported that they

would have liked to have had the opportunity to be assessed in greater detail on their depth of understanding. The participation of these students was driven entirely by the assessment requirements of this subject which led them to suggest that fortnightly written assignments would provide a very good structure for their learning.