Science, Technology & Society, University of Wollongong

STS300: The Environmental Context

Autumn session, 2005, all campuses

SUBJECT OUTLINE

Subject coordinator
Brian Martin, room 19.2016
Mailing address: STS, University of Wollongong, NSW 2522
Phone: 4228 7860 (home), 4221 3763 (work)
Fax 4221 5341
Email: bmartin@uow.edu.au
Web http://www.uow.edu.au/arts/sts/bmartin/
   Sometimes you can find me in my office, especially in the afternoons. You are also welcome to contact me by phone (at work any time; at home after 7am and before 9pm, please), fax or email, to discuss any issue or make an appointment.

Objectives
   • To promote critical thinking about environmental issues and the science and economics associated with them and to practice using social theory in the environmental area.
   • To ensure familiarity with mainstream thinking about environmental issues as embodied in the concept of sustainable development.
   • To provide exposure to alternative views, philosophies and ways of thinking that can be applied to environmental problems.
   • To encourage independent examination of possible solutions and courses of action for reducing or avoiding environmental problems.
   • To develop and improve oral presentation, research and writing skills.

For success in most jobs, the most important attributes are, according to employers:
   • motivation, self-discipline and self-understanding;
   • ability to get along with others and work in teams;
   • communication skills: verbal, written and using communication technologies;
   • skills in critical thinking.
Knowledge — the factual material that you learn in classes — is less important. In STS300 there is emphasis on self-directed learning and on working in teams, as well as communication skills and critical thinking. But don't rely on your university education to give you everything you need for job success. Most university courses are built around individual work, not teamwork, and impose external incentives (marks) that often do not help to build internal motivation.

Subject materials

STS300 introduces you to the social and political aspects of environmental issues and policies by examining the concept of sustainable development from a variety of viewpoints. The major text is Sharon Beder, *The Nature of Sustainable Development* (Melbourne: Scribe, 1996, 2nd edition). The book plus additional readings substitute for formal lectures. There's plenty of educational research showing that lecturing is an inefficient method of teaching/learning. Unsupervised reading is at least as good. I can provide references on this if desired.

Students are expected to review the appropriate material before each week's tutorial. For the assignments you will be expected to find additional material yourself, both on the internet, from the library and from other sources. Please note that electronic databases available through the library are a good source of research material.

Throughout the subject, we will be focussing on *solutions* to actual or potential environmental problems. This includes both alternatives (such as energy conservation or green chemistry) and methods for moving towards them in the short or long term. It includes what *should be* done, *who* will take action, *how* they will do it, *whether* they are likely to and *what* will encourage or discourage them. You will find that most writing is about the problems themselves, with relatively little on alternatives or how to achieve them. So you'll need to think about solutions yourself and discuss them with others.

Additional information The *Faculty of Arts Undergraduate Handbook 2005* is a supplement to these subject notes. See in particular material on staff consultation, student representation, assignments, assessment, Sub-Dean matters, and plagiarism. Students enrolled at Bega, Batemans Bay, Shoalhaven and Moss Vale should consult the BA (Community and Environment) Handbook for this information.

Plagiarism will not be tolerated. For more information, see
http://www.uow.edu.au/handbook/courserules/plagiarism.html.

See also Code of Practice—Teaching and Assessment,
http://www.uow.edu.au/handbook/codesofprac/teaching_code.html

You are not required to pass every component of assessment to pass the subject. I will grant extensions only when application for special consideration are made through SOLS. I reserve the right to hold an additional oral examination for any piece of assessment.

Classes

There are two distinct groups of students enrolled in STS300.

The students in one group are undertaking the BA in Community and Environment through one of the access centres at Batemans Bay, Bega, Moss Vale and Shoalhaven.

Students in the other group attend the Wollongong campus. Most are science or environmental science students, with some Arts, study abroad and others.

I am the tutor for all students in the subject.

Tutorials start in week 1.

Virtual tutorial

All students enrolled through Batemans Bay, Bega, Moss Vale and Shoalhaven constitute a virtual tutorial that will meet by videoconference Thursdays 10.30-12.30.

Wollongong tutorials
- Monday, 14.30-16.30, room 19.2021
- Tuesday, 10.30-12.30, room 19.1056
- Thursday, 13.30-15.30, room 67.209

In the first few weeks I will use introduction exercises and de Bono techniques. We have the practical tasks of choosing theories for the weekly postings, preparing for the weekly postings, getting into groups for the workshops, and looking at best practice in writing weekly postings. In later weeks I will use various facilitation techniques to organise discussions around the weekly environmental topic and theory. Note that discussions will occur *after* you have submitted your weekly postings.

In weeks when there is a workshop, the students involved will run much or most of the tutorial. The key here is peer learning, which educational research shows to be highly effective. So please think of me more as a resource person than as a source of information about environmental issues and theories — though I'm quite happy to comment on those if requested. One of my tasks is to keep discussions on track: I will expect mutual respect and focus on the task.

Environmental topics week by week

This material is adapted from Sharon Beder's previous subject outlines.

Week 1 (beginning 21 February): Introduction
We will introduce ourselves, discuss activities for the rest of the session, and try out some de Bono and/or other techniques for thinking and learning.
Reading: STS300 subject notes; any material by Edward de Bono dealing with creative thinking.

Week 2 (beginning 28 February): The Limits to Growth
During the 1960s and 1970s there was a widespread debate about whether there were limits to population and economic growth. What are potential solutions to the problems caused by growth, particularly economic growth?
Reading: Beder, chapter 3.

Week 3 (beginning 7 March): Sustainable Development
Sustainable development has different meanings to different people. At a government policy level it has developed into a concept that incorporates economic growth as being compatible with environmental protection. Is sustainable development a solution to the problem of meshing economic growth with environmental sustainability?
Reading: Beder, chapter 4.

Week 4 (beginning 14 March): Valuing the Environment
There is controversy over whether the environment can or should be given a monetary price. Will putting a price on the environment help save it or merely reduce everything to economic commodities that can be bought and sold?
Reading: Beder, chapters 6-8.

Week 5 (beginning 21 March): Market Instruments
Governments can use market instruments to encourage firms to curtail environmentally damaging behaviour. Consumers can use their purchasing power to encourage firms to produce environmentally sound goods. Are market instruments a solution to environmental problems? To what extent should they replace legal instruments?
Reading: Beder, pp. 105-121.

3

Week 6 (beginning 4 April): Equity
Equity is about fairness. Environmental equity includes intergenerational and intragenerational equity. How can environmental equity be achieved?
Reading: Beder, pp. 166-185.

Week 7 (beginning 11 April): study week [except for the Monday Wollongong tutorial group, which will cover environmental standards in week 7, technological change in week 8 and miss week 9 due to Anzac Day]

Week 8 (beginning 18 April): Environmental Standards
Environmental standards are supposed to be set on the basis of scientific knowledge but in reality differ from country to country because of the differing social context and varying influence of pressure groups. To what extent can environmental standards help solve environmental problems?
Reading: Beder, pp. 92-96, 121-127, 185-190.

Week 9 (beginning 25 April): Technological Choice
Technological change is not purely determined by scientific inventions and market forces. Social factors may also cause some technologies to be researched, developed and promoted at the expense of others. What can governments and others do to encourage research and innovation that leads technological development in more environmentally sound directions?
Reading: Beder, chapters 20 and 21.

Week 10 (beginning 2 May): Suppression of environmental science
Environmental scientists can come under attack from governments, corporations or other vested interests, suffering slander, loss of grants, and dismissal. What can be done to ensure that scientific work is used in service of environmental goals?
Reading: Robert R Kuehn, "Suppression of environmental science" at http://www.uow.edu.au/arts/sts/bmartin/dissent/documents/Kuehn04.pdf

Week 11 (beginning 9 May): The environmental movement
What should environmentalists be doing to be most effective?
Reading: Michel Shellenberger and Ted Nordhaus, "The death of environmentalism," 2004, available from http://www.thebreakthrough.org/.

Week 12 (beginning 16 May): Environmental backfire
Environmental disasters can trigger public outrage directed at governments or corporations deemed responsible. How can environmentalists use this social dynamic to promote environmental causes?
Reading: Hannah Lendon and Brian Martin, "The dynamics of backfire from environmental disasters," at http://www.uow.edu.au/arts/sts/bmartin/classes/Lendon.pdf

Week 13 (beginning 23 May): Evaluation
We will evaluate what we've learned during the session.

Theories

We will be exploring a range of theories and how they can be used to understand environmental issues. Each tutorial group will choose 8 different theories, one for each of the weeks 3-6 and 8-11. (In each week, each group should have a *different* theory from the other groups, so that each week we all get to see four different theories applied to the environmental topic in the weekly postings.)

Here are some possible theories:

• political: liberalism, representative government, fascism, participatory democracy, socialism, anarchism, totalitarianism

• economic: neoclassical economics, Marxism, political economy, Gandhian economics, humanistic economics

• religious: Buddhism, Christianity, Islam, Hinduism, atheism, Scientology, Rastafarianism, Jediism

• other: feminism, racism, consumerism, altruism, pacifism, militarism

Your tutorial group can also use theories from psychology, law, education and other fields.

The only theories you *shouldn't* use are ones that overlap with the environmental topics, such as environmentalism, Gaia, deep ecology, social ecology and ecofeminism, and ones covered in PHIL256/258, such as utilitarianism.

To find out about theories, consult introductory textbooks such as in economics, sociology or political science, or search library catalogues or the web using the name of the theory or related terms. For example, for anarchism you could also look up self-management or libertarian socialism.

Assessment

Task	Format	Length	Weighting	Due Date
Attendance			pass/fail	Every week
Workshop	Activity organised by student group	20+ minutes	30%	allocated in tutorials
Weekly postings	Contributions to online discussion group	variable	30%	Weeks 3, 4, 5, 6, 8, 9, 10 and 11
Essay	Essay in dialogue form	2000 words	40%	noon 30 May

Attendance

To pass the subject, you must attend at least 80% of tutorials. (Tutorials are omitted from the calculation when a certificate is provided justifying absence on medical or compassionate grounds.) If you are present for only part of a tutorial, that counts as fractional attendance. Attendance is important because much learning occurs through peer interaction.

With the agreement of all students, the following modification will be used. For those with less than 80% tutorial attendance, a corresponding percentage will be subtracted from the overall mark. For example, with 72% attendance, 80% - 72% = 8% will be subtracted from the final mark.

Weekly postings

Due date: Weeks 3 to 6 and 8 to 11
Length: 200 words or more

For each of weeks 3 to 6 and 8 to 11, you should make a contribution to the week's online discussion group about the environmental topic for that week, linking it to the theory for that week. (Students in each tutorial group will decide the sequence of theories for their group.) You should cite at least one source about the theory (more substantial than a dictionary or newspaper article) and two *contrasting* sources about the environmental topic. The reading for the week can be one source on the environmental topic, but doesn't have to be.

The focus of your contribution should be on solutions to environmental problems.

To be counted, contributions must be posted by 4am on the day specified for your tutorial.

Unless your contribution is the first for the week, you should include a comment on someone else's contribution, including a summary of what they said in a sentence or two.

Assessment will be based on your contributions made during two weeks chosen randomly, one from weeks 3-6, the other from weeks 8-11. The same week will be chosen for all students in the subject. This means that 3/4 of your work on weekly postings will not be assessed. You can consider this to be analogous to taking an exam: you study many different topics, but only some of them are covered by exam questions.

Weekly postings will be assessed using these criteria (roughly equally)
• understanding of the week's environmental topic, and focus on solutions
• understanding of the week's theory and its relevance to the topic
• use of sources (including comment on a previous contribution)
• argument (starting from clearly articulated premises; mobilising evidence and logic towards a conclusion; recognising assumptions made and limitations)
• quality of expression (organisation of material, clarity, grammar, spelling, etc.).

Workshop

You can work individually or in a group of two or three to run a workshop on a topic agreed by me. The workshop is for your tutorial group; for the virtual tutorial, that means the workshop is by videoconferencing with students across the access centres.

Normally the topic will involve a local environmental issue (or local aspects of a wider, perhaps global, issue) that you have investigated by observations, collection of documents and other means. You should link this to one of the weekly topics — not necessarily the one for the week you run your workshop. You should also link the topic to one of the theories covered in the weekly postings. Finally, you should focus on solutions to environmental problems.

For example, you might look at solutions to the environmental impacts of local traffic, link them to limits to growth from the perspective of feminism, or link them to environmental valuation under fascism.

The workshop can be run as a combination of presentation, debate, game, quiz, small group exercises or any other activity that helps others to learn. Think of yourselves as facilitators, not presenters. You should not just stand and talk, but should design one or more participatory activities. Consider using overheads, slides, handouts, tapes and videos. For the

virtual tutorial, you should choose techniques that are compatible with videoconferencing; for example, you might email handouts in advance.

You should also include some method to evaluate how well the group has *understood* what you are trying to get across (not just how well they liked the workshop). This is important! Imagine that you were going to run the workshop for another group and therefore want to find out what participants in this workshop learned and what they didn't learn. To assess learning, in principle you should assess participants' understanding before and after the workshop, but in practice you can assume a limited prior knowledge of new topics. Assessment of learning can be by listening to verbal contributions during the workshop, listening in to small-group discussions, collecting materials written during the workshop, getting participants to complete a questionnaire, or other means.

In designing your workshop, use one or more methods developed by Edward de Bono, as described in books such as *Parallel Thinking, Six Thinking Hats, Serious Creativity, Six Action Shoes* and *Water Logic.* Provide a handout for the class describing the de Bono method(s) that you've used, why you chose them and how they relate to your topic. Books by de Bono are available in most bookshops and libraries.

Time allocated for each workshop will be 20 minutes times the number of group members, e.g. 60 minutes for a three-person group.

A few specific points:

    • When speaking, use your memory or notes with dot points. *Do not* read from prepared text, because it almost always is worse than speaking more spontaneously.

    • Identify sources for any quotes.

    • If using overheads or powerpoint, use at least 24-point type (make the print large!).

    • Plan every detail. For example, if you want responses to a question, you might say "Everyone write down a response on a slip of paper" rather than "What does anyone think?" Planning details will make your workshop more engaging.

    • Practise in advance to iron out difficulties and check that you can stay within the allotted time. Keeping to time can be a big challenge.

Once you've planned your workshop, you should discuss your plans with me. I'll give you suggestions on how you might improve.

I will give a mark for the whole group, such as 201 marks for a group of 3. The group can divide the marks equally (67 each) — this is what most groups do — or give me some other division (e.g., 64, 64 and 73). Some suggestions for making this decision are available at http://www.uow.edu.au/arts/sts/bmartin/classes/groupgrade.pdf. Working in groups is a vital skill; don't avoid it because of the marks issue.

Workshops will be assessed using these criteria (roughly equally)
    • Knowledge of case study
    • Understanding of theory
    • Audience involvement
    • Aids (handouts, overheads, posters, videos, videoconferencing, etc.)
    • Use of de Bono methods
    • Method of evaluating how well the class has understood your message. (This is assessment of your *method* of evaluation — not how much the class actually understood. You might have pitched your message too high or low. That's okay. The key is thing is whether you have the tools to figure out what happened.)

Essay

Due date: noon Monday 30 May
Length: 2000 words
Submission: All essays from all campuses go direct to me for marking. Either (1) send by express post (posted by noon on 30 May) to Brian Martin, STS, University of Wollongong, NSW 2522, or (2) put under the door to my office (19.2016).

Put your name on a cover sheet — just STS300 and your name on a piece of paper is all I need — ***but not elsewhere on the essay.***

Write a fictional dialogue between two people (or possibly more). The people ostensibly engaging in the dialogue can be fictional or real, dead or alive, but should not be staff or students at the university. For example, the dialogue might involve Joan of Arc, Rupert Murdoch, Toni Collette, Adolph Hitler, Gandhi, Shrek, Garfield, Jane Austen, Bianca Jagger, Cindarella or Osama bin Laden, but not, for example, Sharon Beder or yourself. The dialogue should be as realistic as possible within the assumptions about the participants and situation. Virtually the entire essay should be dialogue. You may add the equivalent of "stage directions" (see Shakespeare plays for examples).

The topic of the dialogue should be solutions to environmental problems.

Each participant in the dialogue should speak from and/or advocate a theoretical position. See earlier under "Theories" (page 5). For example, Joan of Arc might speak as a Christian and Rupert Murdoch as a capitalist.

Participants in the dialogue should not normally refer to references explicitly (with the exception of well known writers). You, as the author of the dialogue, should provide footnotes at appropriate places, explaining what sources the speakers might be using, drawing inspiration from or bouncing off. You can see how this can be done by looking at some 2004 essays (http://www.uow.edu.au/arts/sts/bmartin/classes/STS300_04topessays/). A minimum expectation is four different sources about the environmental problem and three different sources about each of the two theories. (That's a minimum of 10 in total.)

You are welcome to work in a team to collect material for the essay. For example, in a team of four, two team members could investigate the environmental problem and solutions and the other two members could study two theories. You must write your own individual essay.

Essays will be assessed using these criteria (roughly equally)
  • knowledge of the environmental problem
  • understanding of theories
  • logic and creativity of solutions discussed
  • use of sources
  • quality of the dialogue