Time chart

Use this as a shorthand version of the time frame to check your timing as the session proceeds.

1	5 mins	Introduce the process and assign teams – briefly review the task from last week, explain the timing
2	10 mins	Organise teams, arrange debating room set up [can be done ahead of time if the room is available]
3	15 mins	Team preparation
4	60 mins	Debating teams in action
6	25 mins	Discussion

TOTAL - 115 minutes – timing for each speaker depends on the number of teams see Appendix 1

NB - Read the Student notes for this session to be confident you understand how they are being asked to think about the content of the session and the learning process.

These notes are provided to help tutors prepare for the first of three sessions on the topic of Engineering Across Cultures. They outline the teaching/learning process designed to accompany the materials.
Tutors using these materials may be more, or less, experienced at facilitating learning via groups and discovery learning strategies, so the notes are as comprehensive as possible and you are invited to use them as you see fit for your needs.

Resources

See the Resources document for links to web sites and a list of relevant documents to assist you and the students prepare for the debate.

Student learning outcomes

Through engagement in this tutorial, and in terms of academic learning outcomes, it is anticipated that students will be able to:

- analyse complex data about competing claims and produce a 'position' statement for one side of a debate on the topic;
- explain why this engineering process is having a specific impact on associated community opinions;
- identify differences among engineering goals, community interests and concerns, and explain the impact of such differences on decisions about specific engineering projects;
- describe the roles and responsibilities of engineers and some of the competing demands that are involved.

Process

This unit of study is presented as a debate between opposing sides of a current community dispute involving engineering activity [specifically mining, in this case] and community concerns. *To be effective, student materials need to be distributed a week prior to the session.* This allows students to make use of the various resources and web references, etc., to develop a general understanding of the issues involved in the topic.

One week prior to the session

Distribute the student notes and highlight the importance of everyone knowing as much as possible about all aspects of the issue. Introduce the forthcoming session as a debate, involving the whole group in exploration of a contentious community issue that has been receiving a lot of attention in the media and among specific local communities. The purpose of this activity is to enable all students to explore the factors contributing to the complexity of the core issue. There is no intent or purpose to give undue emphasis to any one argument constituting the issue.
It is helpful to emphasise that the notion of 'progress' as an abstract generic term itself is itself contested, and that arguments claiming that any particular action is 'for' or 'against' progress, can, at some point, be disproved in specific circumstances. That is, they are not to argue at any time that any particular item or action is 'good' or 'bad', merely because it is 'for' or 'against' progress. In effect, this doesn't prevent anyone arguing that there are/are not 'benefits' attached to the concept. It does reduce the likelihood of teams making extravagant and unprovable claims for or against the notion of 'progress' as individual proponents may perceive it.
Debating teams are not chosen until the beginning of session. Participants are randomly assigned to teams on the day. That is – working together during the week to collect and share information is encouraged, but all material is available to all debating teams to ensure the best possible information is used to inform the debate.

A day or so before the debate

Make your selection of the debating teams using the following criteria.
Each team will have up to five members – four will speak and one is the resource supporter [see task sheet at Appendix 7]. It is up to the teams to choose who has each role. [This allows some debate among the team, as some will not feel confident and prefer not to talk, but they have to have that debate with their team members.]
If your class is not divisible by five use one of these options –

- have a debating team of two, with two support members;
- appoint two or three students as adjudicators to work with you on choosing the winning teams;
- have teams of three with one resource support member;
- designate one or two students to be the convenors/judges for the session, with responsibility for timing and sequencing of presentations as well as managing the voting process;
- appoint one team [membership number determined by choices about debating teams] to be the 'media reporters', whose job it is to clearly and succinctly summarise the cases put by both teams. They do not have to judge the 'winners', merely summarise their cases in a way that is fair and impartial.

On the day

Announce the teams and distribute ONE of the debating topic/s to each pair of teams – see Appendix 5
Arrange the room roughly in accord with the diagram in Appendix 4.

The key is to have a clear space between the audience and the debating space, while allowing teams to work together as they prepare. Each team needs its own space to prepare. The tutor's space should be well to the side and as unobtrusive as possible. The focus of the debaters should be on their peers as audience, not on you.
If you are using students as adjudicators, convenors or media reporters, give them their briefing sheets and allow them to work together to prepare.
Allow about 30 minutes for team preparation. Actual timing depends on the number of teams in the 'debating competition' - see timing sheet at Appendix 1.
Once you have done this, adopt the stance of resource/adviser and observer. Tell everyone that, during the preparation time, they can ask you questions and you will help wherever you can.
As the end of the preparation time nears, tell the adjudicators/judges and convenors to take their seats, and check that they feel able to do their tasks.
Announce the beginning of the debating competition.
Follow your chosen timing chart - or ensure that your convenors do so.
Once the last team has completed its case, ask the debaters to spend a few minutes reviewing the quality of their presentation – see Appendix 4 for guidelines you can distribute. Ask the adjudicators to confer and prepare their judgment on the presenters. See Appendix 2 for a scoring sheet.

Appendix 1

Time Schedule for varying numbers of debating teams assuming a two-hour session.

Option 1	Number of Students	Time Allocation
6 teams 3 pairs	This assumes a minimum of 24 students. With a larger class [but less than 30], additional students are adjudicators and media analysts.	15 minutes per pair of teams. 2 minutes per speaker allows 12 minutes of speaking and 3 minutes for logistics.
	6 convenors/adjudicators	

Option 2	Number of Students	Time Allocation
8 teams	This assumes a minimum of 32 students. In a larger class, other students are adjudicators and media analysts.	15 minutes per pair. 2 minutes per speaker allows 12 minutes of speaking and 3 minutes for logistics.
	3 convenors/adjudicators	

Option 3	Number of Students	Time Allocation
4 teams 2 pairs	This assumes a minimum of 16 students. With a larger class [but less that 24], additional students are adjudicators and media analysts.	15 minutes per pair. 2 minutes per speaker allows 12 minutes of speaking and 3 minutes for logistics.
	3 convenors/adjudicators	

Appendix 2 - SCORING THE DEBATE

TEAM NAME_____

For each of the five items circle the score that best fits the performance of the team. In the box below the table write the total scrore for this team.

	Addresses topic		**Use of Facts**		**Quality of argument**		**Teamwork**		**Organisation**	
Top Notch	Whole speech is directly on topic	**5**	Provides large range of facts to support argument	**5**	Arguments clear and convincing	**5**	Uses all team members effectively – clear links among all speeches	**5**	Superb - opening captures attention; speakers coordinate, closing is excellent	**5**
Clear and Crisp	Much of the speech is on topic	**4**	Provides sufficient facts to support the argument	**4**	Arguments are sometimes clear and convincing	**4**	Speakers follow each other quite well	**4**	Sufficient links to make a good argument	**4**
Not so Good	Little of the speech refers to topic	**2**	Provides few facts to support argument	**2**	Arguments are rarely clear or convincing	**2**	Few clear links among speakers' arguments	**2**	Some attempt at organising the speeches	**2**
Unready	Nothing relevant to the topic	**1**	Does not use facts that support topic	**1**	Arguments are unclear and not convincing	**1**	No links – each speaker presents an isolated case	**1**	No evident organisation among the speakers	**1**
Extra comments										

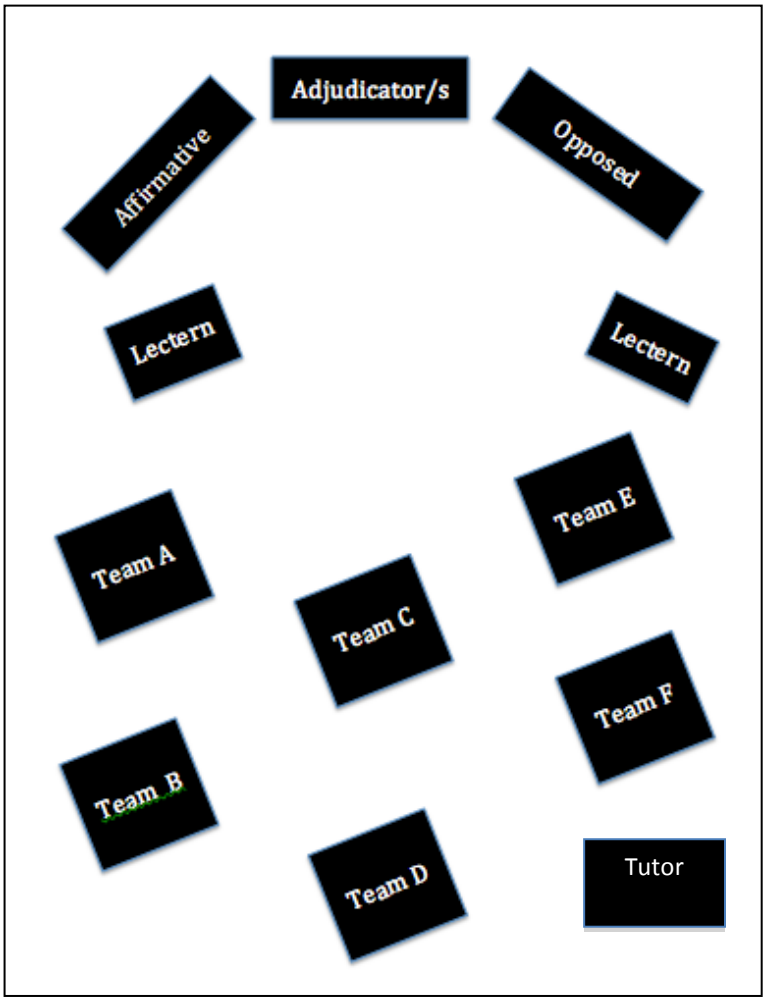
TOTAL	

Appendix 3

Room layout for debating

The key is to have a clear space between the audience and the debating space, while allowing teams to work together as they prepare. Each team needs its own space to prepare and, unless you are adjudicating the debates, your place should be as unobtrusive as possible. The focus for the debaters must be on their peers as audience, not on you.

If you are using students as adjudicators, convenors or media reporters, give them their briefing sheets and allow them to work together to prepare.



Appendix 4

Debriefing / reviewing the learning process and knowledge gained

As a learning process, a debate provides two distinctive sets of learning outcomes:

1. one concerns the content and detail of the topic of the debate;
2. the other provides the chance for a critically evaluative reflection on such things as:
    - capacity to work as a team – as demonstrated by the quality of the work in preparaton and presentation phases;
    - ability to arrange thoughts and present a clearly defined argument;
    - ability to examine a situation objectively and present well thought out arguments either for or against it;
    - capacity for learning from the practice of "making a case for . . [or against]";
    - willingness to examine an issue in an objective manner;
    - ability to identify personal stances in relation to a contentious issue.

An effective debriefing will address each of these two topics in the order presented above - giving more emphasis to the second one. This is important, because content issues will grow and change over time, whereas the reflective process will be less likely to get attention if it is not emphasised at this time.

Debriefing the content

The debriefing needs to be focused and orderly – so ask participants to sit in a circle, or in an arrangement that enables them to see everyone. Move first to the topic and ask questions such as:

- How has engaging in a debate extended your understanding of each side of the case?
- What kinds of information will you seek in future to ensure you are fully informed?
- How does learning to mount a highly specific argument [regardless of whether you believe it or not] help you to understand a complex issue like this?
- What did the debate show about 'making a case' for an issue you feel strongly about?
- What were the strong [and weak] points presented? Why were these strong[or weak]?
- How could you make them stronger?
- How could you mount a more effective challenge to points you were opposing?

Debriefing/Reflecting on the whole process

Invite participants to now shift their attention to a point away from the immediate energy of the debate. They may want to take a short break, or walk around for a minute or two, before settling in to this discussion.
Remind them that the purpose of this unit of study is about more than understanding the factors involved in a technical/community conflict issue such as Coal Seam Gas. It is also about learning to look beyond the immediate issues and consider how to 'listen' intelligently to cases being presented by others (in the media or at work, for example), interrogate and present their own opinion effectively, and thus feel confident that they are 'well informed' when presenting their opinions about what best to do.
Questions to ask in this section can include –

- What happened during the initial research phase? Did you become more interested in the issue? Did you develop a stronger stance about it? Did you want to find more information about either side? If so why? And what were you looking for?
- During the debate itself, how did you prepare for your speech? What factors made it harder or easier to be a good presenter?
- How difficult was it to arrange – and rearrange – your thoughts to counter the opposition?
- What comes to mind about being prepared to make a case for an issue in future?
- What will you do differently when you have to make an argument for something you want to win?
- How does a debate mirror the way issues are fought out in the media and politics?

Appendix 5

Possible debating questions for this topic

1. That Coal Seam Gas is an essential commodity for effective energy support of the best development for Australia's future.
2. That the particular needs of a specific community must not be allowed to override the wider needs of Australia's economic development.
3. That Australia already has too many open cut mines and development of Coal Seam Gas sites will be to the detriment of our social fabric.
4. That Coal Seam Gas is not neither harmful nor distressing for communities and will provide resources for continuing development of an economically sound future.
5. That wind farms and other renewable energy sources are far better providers of energy for our economic future that is Coal Seam Gas.
6. That economic considerations are the single most important factor in planning for a sound economic future for Australia.
7. That coal seam gas is not a mineral and should be managed and treated as a separate substance, requiring different standards of mining and management.
8. That food is more vital to the future than coal seam gas and food growing regions must be exempted from exploration for CSG.
9. That the Great Artesian Basin is a pure water reservoir and will be damaged by any CSG activity allowed within its confines.
10. That Coal Seam Gas and National Parks and nature reserves can co-exist safely and collaboratively in Australia.
11. That Australia's economic future requires commitment to Coal Seam Gas exploration and mining.
12. That braches of national and state regulations are not sufficient to require cessation of Coal Seam Gas exploration.
13. That farming and mining can co-exist to the mutual benefit of all parties.
14. That Coal Seam Gas is not an appropriate activity for development in areas of human habitation.
15. The carbon footprints of Coal Seam Gas and cattle production are equally likely to cause environmental harm. Coal Seam Gas should therefore be treated the same as cattle in regard to regulations and requirements.