

Time chart

Use this short version of the timeframe to check your timing as the session proceeds.

1	10 mins	Overview of the unit
2	10 mins	Self assessment against workplace competencies
3	10 mins	Aceh – a case study
4	10 mins	Introduce EWB [or other workplace] project
5	55-75 Mins	Students consider EWB [or other] projects, draft preliminary ideas
6	10 mins	Large group review
TOTAL	120 minutes [with a 'fudge factor' of 15 minutes at step 5]	

NB - Read the Student notes for this session to ensure you understand what is being asked of them in regard to the session content and the learning process.

These notes are intended to help tutors prepare for running a unit in the series on Engineering Across Cultures.

Tutors using these materials may be more, or less, experienced at facilitating learning via group-based activities and discovery learning strategies and tutors are invited to use them as you see fit for your needs.

Resources

1. *Engineering Your Future: an Australasian Guide*, by D. Dowling, A. Carew and R. Hadgraft, John Wiley & Sons Aust. Ltd., Australia, 2010
2. **Pre-reading:** Dowling et al Chapters 4 and 5. Or similar information on communication skills for engineers.
3. EWB web site - <http://www.ewb.org.au/explore/initiatives/ewbchallenge>
4. Self-assessment worksheet
5. Video clip - post-tsunami housing projects in Aceh (play recommended from 5.00 minutes to 9.10) <http://www.abc.net.au/foreign/content/2010/s2890321.htm>
6. Powerpoint Slides

10 mins – Overview of the unit

- State the learning outcomes
- Explain that this unit
 - addresses the Brief and Research steps in initiating work with clients
 - introduces how the EWB [or other workplace] project will work
 - uses a self-assessment task to review current competence
 - uses a video case study and explores Fig. 4.5, p. 148 Dowling et al. – the PCR [Purpose-Communication-Response] model of communication
 - Introduces the EWB [or other workplace] project.
 - Use a reflective approach to identifying what has been learned in the Unit

Student learning outcomes

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

- describe how contextual factors influence the effectiveness of communication
- draw on a general understanding of cultural protocols for designing their EWB [or other work oriented] project
- set priorities and manage time effectively
- actively contributes to discussions
- generate questions to ask of their EWB [or work related project] clients

Graduate Qualities addressed

Every University has its own statements about Graduate Qualities or Capabilities. These materials are built on those developed for the Faculty of Engineering at the University of Wollongong, which are online at

<http://www.uow.edu.au/student/qualities/index.html>

In general the Qualities addressed in this unit of study are

1. **Responsible:** Appreciate and respect diversity. Act with integrity as part of local, national, global and professional communities.
2. **Effective communicators:** Articulate ideas and convey them effectively. Work collaboratively and engage with people in different settings. Recognise how culture can shape communication.

Tutorial Plan

10 mins – introduction

This section is standard for all EAC materials. If this is part of a series of units being used with this group of students this need not take the full time allocated. However it is always important to ensure that the students understand the nature of each unit of study.

1. Introduce yourself [where this is necessary] and explain any relevant standard information about evacuations etc. Mention that the session includes group work and that they will be moving into teams shortly.
2. Provide a brief statement about the importance for their careers of being culturally aware and sensitive to local needs and conditions. If you have a personal experience of becoming aware of cultural differences in regard to their impact on some aspect of your work/life – especially in regard to un/successful completion of projects- you might share it briefly to set the scene for exploring the topic.

10 mins – Self assessment against workplace competencies

5 min - Distribute the worksheet to Students. Explain briefly that they are to rate themselves against the asterisked competencies on the worksheet. Ask them to be honest with themselves – as they do not need to hand this in to anyone. The main purpose is for them to find areas where they can focus their attention to improve their own capabilities as professional engineers.

5 mins - when the time is up, lead a short discussion on how such capabilities will have an impact on their success as engineers in all kinds of workplace and social contexts. On p. 148 in Dowling et al (see slide 4) is a complex diagram representing the “Purpose–Communication-Response” model representing a way of thinking about how communication operates.

If you are not using Dowling et al substitute any relevant model of communication that satisfies the key concept of communication as a means of linking a purpose with both desired and actual responses. The aim is for students to understand that communication is a complex process and well worth close attention early in their career.

10 mins – Aceh - a case study

The aim here is to demonstrate the extent to which effective use of good communication can make a huge difference in people’s lives. Note that this is the kind of project they could opt to do for an EWB project [or other workplace project].

10 mins – Show video and lead discussion

NB - a key part of the video transcript is in the handout. Remind students to use this to think more deeply about what they are seeing and hearing. Remind them to work on making connections between the items in the self-assessment questionnaire and the communication factors explored in the video.

Once you have shown the video, lead a discussion on questions such as

- How would you describe what happened?
- What might be the feelings of the groups of people involved in the various projects?
- What might be the longer-term impacts of each set of outcomes?
- What are the implications for EWB [other related workplace] projects?
- How do people gain the kinds of attributes included in the assessment list?
- What kinds of personal actions will ensure they remain competent?
- Which competencies were demonstrated by various people in the video?

60 mins – beginning to work on a project as an engineer

45 mins - Students consider the range of possible EWB [or other workplace] project areas, draft their preliminary ideas, decide on a focus area, and begin defining the problem they are choosing to address. Pages 240 to 251 in Dowling et al provide an extensive introduction to communication issues in regard to project brief preparation. Other texts on communication skills will also help. Explain that they have three tasks

1. Develop a list of questions to ask EWB – as the client representative – or the actual client representative if they are doing another workplace project.
2. Using this list of questions explore how to approach the project, as a team-based learning and assessment task.
3. Begin to draw up a schedule of tasks, research activity, writing etc.

5 mins – after 45 minutes stop discussion. Ask teams to prepare a report on their progress. Tell them that this aligns with normal workplace of progress meetings and emphasise that

- the report must be brief
- they will not be required to stick with their tentative decisions
- the presenter will not have to do the next presentation [i.e the role of team representative is to be shared]

10 mins – each team has one minute to present their report. They are allowed to pose one question for the whole class which you will record and return to in the closing section.

10 mins – Review of the learning gained

In the last 10 minutes ensure that everyone is sitting where they can see everyone. Ask the whole group to identify key facts, ideas etc. that they have become aware of, in regard to communication as an engineer. Refer to the team reports and discuss the rate of progress and identified questions with whole class. Where you have an answer or can suggest resources to find the answers, share these with the group. Where you are not sure, or think that finding out for themselves will be of benefit, advise the group how they might proceed, and that you will return to these at a future session.

Ask them to identify what other information they need and invite everyone to collaborate on sharing information sources and ideas for making progress.

Ask them to nominate sources for the information [see unit two in this series for ideas]

Collect all the questions they would like to ask the EWB client representative [or the workplace project client]

One Hour Version

If using the Case Study only for a one hour session, the following timetable will apply. The additional time allowed for the case study can be usefully applied to an exploration of the students' answers to the self-assessment worksheet and then considering how each of the items in that list is – or is not – demonstrated by various people in the Aceh video clip.

In addition, the needs of clients can be considered directly in regard to the various survivors of Aceh.

1	10 mins	Overview of the unit
2	15 mins	Self assessment against workplace competencies
3	20 mins	Aceh – a case study
6	10 mins	Large group review