PROFESSIONAL PRACTICE 1

ASSESSMENT GUIDE

Australian National University

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Assessment Summary

Assessment for this course centres on key competencies important to think and practice responsibly as an engineer, and relating to the targeted learning outcomes. Assessment will be based on a combination of individual and group assignments (written and oral).

You will complete a semester-long project in groups, to practice the course material through hands-on case studies, and develop an actionable strategy grounded in real-life experience. You will also be assessed weekly on your individual career episode piece, which centers around practicing course materials on one of your own career episode.

Assessment task	Value	Due date	Date for return of assessment	Learning outcomes
Career Episode Piece	**40%** 4 Submissions (10% for each week's submission)	• Piece1 – Aug 19 • Piece2 – Sep 2 • Piece3 – Oct 14 • Piece4 – Oct 28	Within 2 weeks of submission	1,3,5
Case Study- Group Project	**50%** • Report (20%) • Group Presentation (10%) • Toolkit Portfolio (20%)	• Report - Oct 28 • Group presentation - week 11 • Toolkit Portfolio – 1 Nov	As results from first semester published	1,2,4,5
Tutorial Contribution	**10%**			1,2,3,4,5

Extensions and penalties

Extensions and late submission of assessment pieces are covered by the [Student Assessment (Coursework) Policy and Procedure](#). Note that no extensions will be granted for completing Career Episode Pieces. Instead, if you miss up to two pieces, the next submission will be considered alternative assessment.

The Course Convener may grant extensions for any of the other assignments. If you need an extension, you must request it in writing before the due date. If you have documented and appropriate medical (or other) evidence that demonstrates you were not able to request an extension before the due date, you may be able to request one later.

Irrespective of when you request it, to receive an extension you must provide a copy of any evidence that documents why you need an extension (e.g. medical certificate, counsellor's note, police report, etc). You will be granted the extension only if the circumstances necessitating an extension are beyond your control and could not have been reasonably anticipated, avoided or guarded against. Ongoing disabilities and medical conditions are a possible exception to this, if you are registered with Access and Inclusion and they have determined that you may be entitled to extensions routinely in your Education Access Plan.

Late submission of assessment tasks without an extension are penalised at the rate of 5% of the possible marks available per working day or part thereof. Late submission of assessment tasks is not accepted after 10 working days after the due date, or on or after the date specified in the course outline for the return of the assessment item.

If an assignment is due on a public holiday, you will not be penalised in this course if you submit the assignment by the next day. This is not an ANU-wide policy but will be applied consistently in this course.

Resubmission of assignments
In some situations, you may be offered the opportunity to resubmit an assignment for a borderline pass if you are in danger of failing the course. You may talk to the Course Convener any time if you believe you are in that situation.

TASK 1   Career Episode Piece (40%)

In this assignment you will work individually on a career episode of your own in order to test course content on a personal and very familiar project. The assessment provides you with a way of evaluating your skills and competencies throughout the semester on a project that you have been involved in as a professional.

The assignment provides you with an opportunity to develop reflexivity about your own practices and learning, and to develop succinct reflective writing capability. Such a skill is particularly important for job readiness, including in formulating effective job applications, and for writing Career Episodes in CDR (Competency Demonstration Report) which is currently part of Engineers Australia accreditation process.

The career episode is used as a familiar case study to answer the question provided in each week's tutorial (see page 8).

You are required to write reflective style answer (~700 words) to the week's questions covering subjects dealt with on the course (see Figure1).

This assignment helps you to improve your skills in writing, including refining, structuring and presenting your position and argument.

> **Submit 4 Career Episode Pieces throughout the semester, each worth 10% of final grade.**

For more about essay writing → Check here.

For more about reflective writing → Check here.

What is a Career Episode?

A career episode is a brief narrative that focuses on and addresses a specific situation in someone's career experiences. The narrative includes the following:

- how a specific task was completed,
- the process followed,
- the judgements made,
- the results and outcomes achieved and,
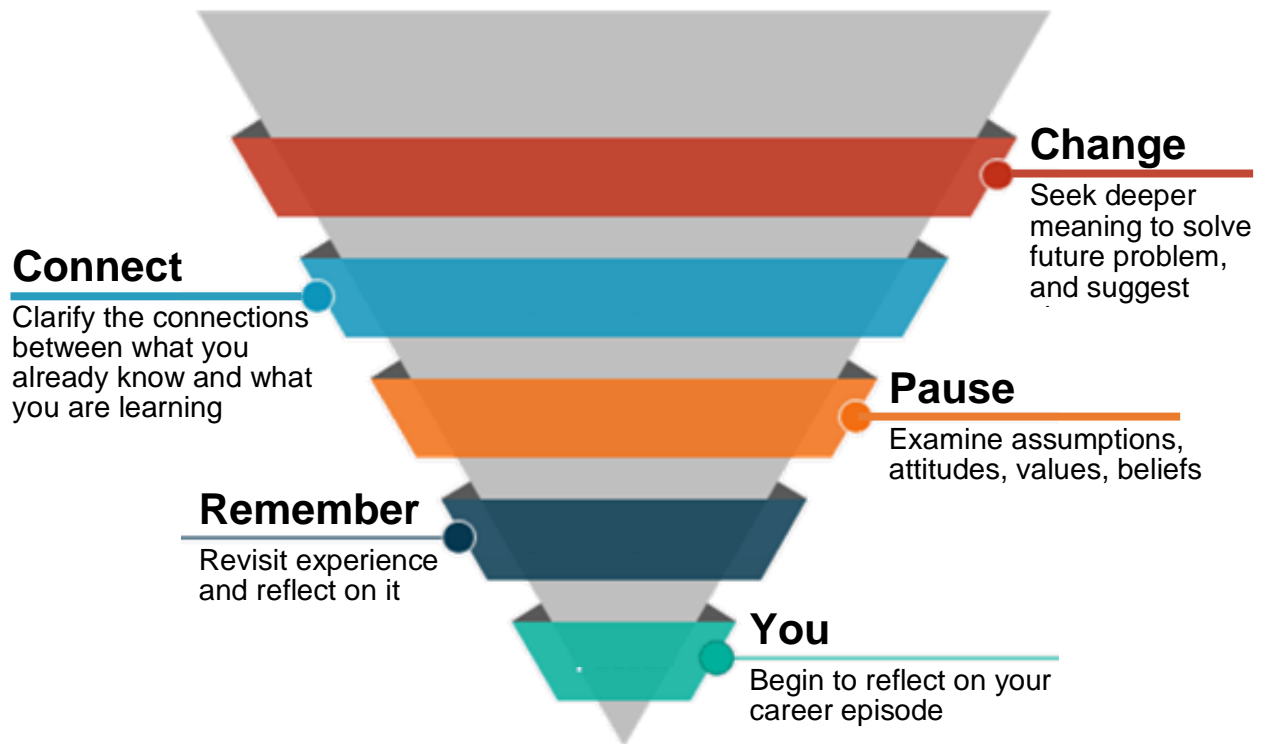- the relevant supporting evidences (if applicable).

Change
Seek deeper meaning to solve future problem, and suggest

Connect
Clarify the connections between what you already know and what you are learning

Pause
Examine assumptions, attitudes, values, beliefs

Remember
Revisit experience and reflect on it

You
Begin to reflect on your career episode

Figure 1 Thinking process to write a reflective career episode piece

STEP 01
Select your career episode

Throughout the semester, you will be asked to test the course material on a career episode — i.e. a task you have completed within the past few years as an engineer or a computer scientist/engineer.

You are encouraged to select an episode which has the following characteristics (the more, the better):

1- It includes a wide range of stakeholders— your project might include stakeholders from government bodies, industry, NGOs, users, etc.

2- It is part of a bigger project/initiative— your work is part of a greater effort that both includes you and transcends you (i.e. you had to collaborate to get the job done)

3- It involves many processes and moments of decision-making— you used your engineering judgments in different occasions.

4- It affects society and the environment in some ways.

5- At some stages, you (or your team) had some tough decisions to make.

Note:

(1) Talk to your tutor if it's difficult to identify an episode in your career. We highly recommend that you use an episode that you know well in order to practice the course material on something you already know and have some first-hand experience about.

(2) You can change your career episode during the semester, provided you get confirmation from your tutor.

More information on Career Episode will be provided in Week 1 tutorial session.

You can also use career episode checklist (uploaded on the Wattle), to test your ideas for finding the best episode to work on during the semester.

STEP 02
Inform your tutor about the selected episode

You need to select the career episode you'd like to think deeper about and work on it throughout the semester in the very days of the course. After tutorial 1, you need to inform your tutor about the selected episode.

Provide your tutor with a short brief of the episode (~ 200 words). Complete your career episode checklist (see on the Wattle) and send it along with the episode brief.

You MUST get confirmation from your tutor before writing an essay related to career episode.

STEP 03
Use the episode to think about the course thematic questions

You are provided with a question each week to reflect on. Use the episode as the case study to answer the week's question. The list of question is presented on page 8.
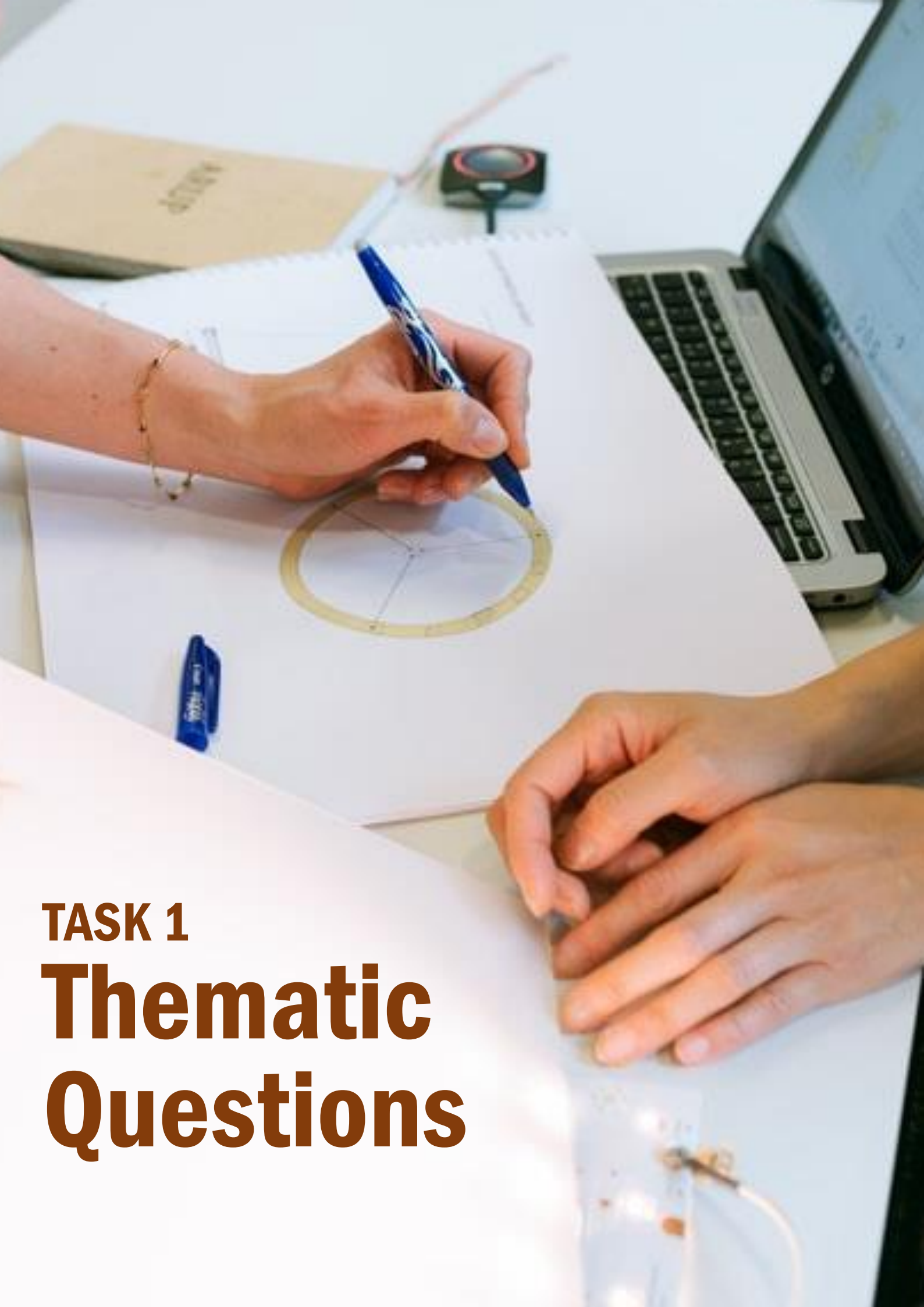
STEP 04
Write your piece and submit

For this assignment you need to submit 4 pieces of writing. You DON'T need to answer all questions on page 8. Just select one of the questions specified for each career episode piece and write about it. For example, for career episode piece1, you may choose between answering three questions:

(1) how did engineering standard and guidelines (in the country where the episode happened) influence your decisions and actions?

(2) what are the social and environmental systems in your technical project? or

(3) who are the key stakeholders involved in the episode?

You can include other supporting materials as the appendix.

TASK 1
Thematic
Questions

CAREER EPISODE PIECES

	Questions
Piece 1	Week2 Being a professional How does engineering standard/guidelines (in the country where the episode happened) influence your decisions and actions? • *What was the primary concern in the guideline specifications?*
	Week4 Socio-technical Systems What are the social and environmental systems in your technical project?
Select one of the themes from week 1-4 to write your career episode piece1 (due date: Aug 19)	
Piece 2	Week5 Ecosystem Mapping Who are the key stakeholders involved in the episode?
	Week6 Being ethical in research What are the ethical challenges associated with the research and your work?
Select one of the themes from week 5-6 to write your career episode piece2 (due date: Sep 2)	
Piece 3	Week7 Being responsible in innovation How do you see your practice and thinking within the context of responsible innovation?
	Week 10 Team member/leader How does team structure and process affect your team performance? Explain the complexities involved.
Select one of the themes from week 7-10 to write your career episode piece3 (due date: Oct 14)	
Piece 4	Week12 Being a responsible professional How would you use skills gained from this course in your job role, to be a responsible professional? • *Reflect on your episode, and write about what it takes to be a responsible professional. Also, reflect about whether your description of a responsible professional is limited to a specific context (i.e. do you believe there is a difference between being a responsible professional, for example, in China and Australia)*
	Write your career episode piece4 (due date: Oct 28)

TASK 2   Case-Study Group Project (50%)

This assignment is designed to allow you to test your professional skills on a particular case study. You will receive a group mark for this assignment upon demonstration of equal contribution of all members to the group project.

For this task, each group will submit:

1) a report (20%)

2) a group presentation (10%), and

3) a toolkit portfolio (20%).

The mentioned percentage is worth of the final grade

STEP 01
You will be assigned to work on a project

In a group of 3 or 4, you will work on a case study to practice your professional skills throughout the semester. It is important that work on a project that aligns with your interests and experience. So, if you care about the subject that you are going to collaborate on, let us know so we assign you to a specific project.

Following is the list of four projects that you can work with other students who share the similar interests as you. Your group will look at different aspects of a case study and produce a report, and a presentation.

Here is the list of project that you can work on as a team:

1) Remote-control signalling in Carmichael coalmine [see 1,2,3]

2) Thermal imaging to track coronavirus patients (e.g. Kogniz or Feevr)

3) Lithium mining in Australia for electric cars and renewable energy

4) OpenAI's language generator GPT-3 [see 1, 2,3]

 *** You Can Also Suggest A Project *** (speak to your tutor)

STEP 02
Enrol in a project on Wattle

Enrol in project on Wattle site. If you want to form a group working on a different topic, you MUST get approval from the tutor coordinator for your choice.

STEP 03
Get together and discuss

In your group, discuss about different aspects of the project. Consider by the end of this project your team has to be in the position to talk about the project in detail. So, read and research as much as you can about your project.

The following 10 questions helps you to collect the relevant information about the project:

1) What is the project about?
2) What is the context?
3) What are the binding guidelines/standards that shape engineers' judgments and policymakers decisions in the project?
4) Who are the key actors in the project?
5) Who benefits most from the project?
6) Who is marginalised in the project, and why?
7) Which types of skill set are necessary in completing the project?
8) How the project is interacting with social and environmental systems?
9) What are the ethical challenges for the engineers involved in the project?
10) What are the points of conflicts among different actors involved?

Weekly seminars and tutorials will provide you with methods and approaches that you can use to answer each of the abovementioned questions. For more information speak to your tutor.

STEP 04
Write a report

Summarise your findings and discussions about the project in the form of a 2000 words report providing an account of the situation.

The report includes three section:

i. Project summary

Here, you need to introduce the reader to the project and the situation in which it has emerged. The provided 10 guiding questions in Step-3, can help you to structure this section. The section is expected to cover topics underlie the questions, including: the context, different systems involved, key actors and the interactions between them, and social, environmental, and ethical challenges posed by the project.

ii. Findings

Here is where your group can show interesting facts and findings emerged from discussions and research that you, as a team, are proud of.

iii. Discussion

Write the discussion section, by answering the following question:

- o How engineers/professionals who are involved in the project can think and practice more responsibly?

Note: Report structure is quite flexible (definitely **having a reference section is a must**). However, it'd be more professional-looking if the report has a table of content and a summary section at the beginning.

STEP 05
Present your teamwork

Each group presents a 10-minute presentation that responds to team project work.

Sometimes the audio or video in Zoom becomes choppy or distorted. To ensure the presentation session:

Students to submit 1 copy per project team to case-study project presentation link to your tutor:

- 1 x PPT/PDF version of your presentation

Your tutor will check the docs and liaise with the team representative if there is any need for follow up regarding the doc submissions before your tutorial session.

Also remember not to start other bandwidth-intensive activities just before, or during presentation session as much as possible.

STEP 06
Develop tools for responsible thinking/practice

If you are a creative person, this is a space reserved for you to shine.

Use your skills in the group and discuss how you can develop **two tools** (or more) that other engineers can use to be more responsible in their thinking and practice.

The tool potentially enables the user to think critically and holistically about the technical systems they are involved in as an engineer. It could be a game, framework, guideline, team-based activity, qualitative/quantitative technique, etc.

For inspiration, you might look at three tools that Microsoft has recently developed and released for responsible innovation in May 2020. According to Microsoft the tools provides practitioners with a set of practices for anticipating and addressing the potential negative impacts of technology on people. See the tools here: https://docs.microsoft.com/en-us/azure/architecture/guide/responsible-innovation/

Once you've created your tools, it's time to develop **a landing page** to tie it all together, and host your creations. The landing page will make it easier for others to use your tools and learn about responsible thinking and practice from your team's perspective.

More instruction on this task will be provided in the tutorial session. On the course Wattle site you can also find a document with few examples for toolkit portfolio.

Note:

During the week 8, team will present the initial idea of their toolkits to their tutors. The tutors will provide feedback to each team group as well as an indicative mark for their toolkit portfolio. Students needs to incorporate the feedbacks/comments into their final submission. Failing to do so, up to 50% of the final mark will be deducted.

Task 3   Tutorials (10%)

The tutorial mark is not based on your attendance, but on how well you contribute to the tutorials. In this course, tutorial contributes to course assessment, and counts as **10% of the whole course mark.**

Tutorial marks are allotted by tutors, so ask them in the first tutorial how those marks will be distributed. A mix of preparation (reading and answering set questions), amount of participation and insightfulness of comments and questions is a common basis for awarding participation marks. Dominating or disrupting the group work may be marked down.

It is completely normal to feel a little anxious about speaking up in tutorials, particularly if you are a shy person or not used to expressing your ideas in a group. You may have concerns about saying the 'wrong' thing and offending people, or worried that other people may think that what you say is 'dumb', and will criticise or 'shoot you down' for it. If English is your second language, you might find it difficult to follow what's going on, and are worried that even if you do speak up, your classmates will have trouble understanding you.

Here are some strategies to help you participate and effectively contribute to the tutorial activities:

- Turn on your camera during the tutorial (in Zoom meeting). Participate in non-verbal ways simply by making eye contact with the person speaking and listening carefully to what they have to say.

- Come to tutorial prepared. This will help you to contribute, understand and follow what's going on. It's not necessary to read every word of the set readings but you will need to adopt some reading strategies. As you read look for answers to set questions and for different positions and arguments. Take notes to use in class.

- Start a discussion going and/or keep it going by asking a question - about a key concept, idea or reading for that week, or seek clarification of something that was covered in the seminar. A tutorial can become awkward if no one responds to the tutor's question, or one student makes a statement but no one responds. This can be a frustrating as well as embarrassing experience.

- Follow the discussion so that you are prepared to jump in with your contribution. Once you have spoken, you will find that it's not so scary after all! Tutorials are a good way to practice your communication skills and to test that you understand the material.

- The ability to disagree, and be disagreed with, is a key element in the development of critical awareness and the communication of ideas at university. A tutor may challenge students in order to deepen the analysis and strengthen the argument. If you disagree with something you need to give evidence to support your argument. Remember, there is no necessarily 'right' way of thinking.

- Sometimes the messages sent are misinterpreted. If you feel upset about a comment, disagreement or criticism, it is important to talk about it, preferably with the tutor.

CONTACT US

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