

Q1: Where do you think the project value delivered is located on the Value graph?

Figure 1: Value plots with graph overlay

L: Value that the team delivered to the client

R: Value that the individual delivered to the team

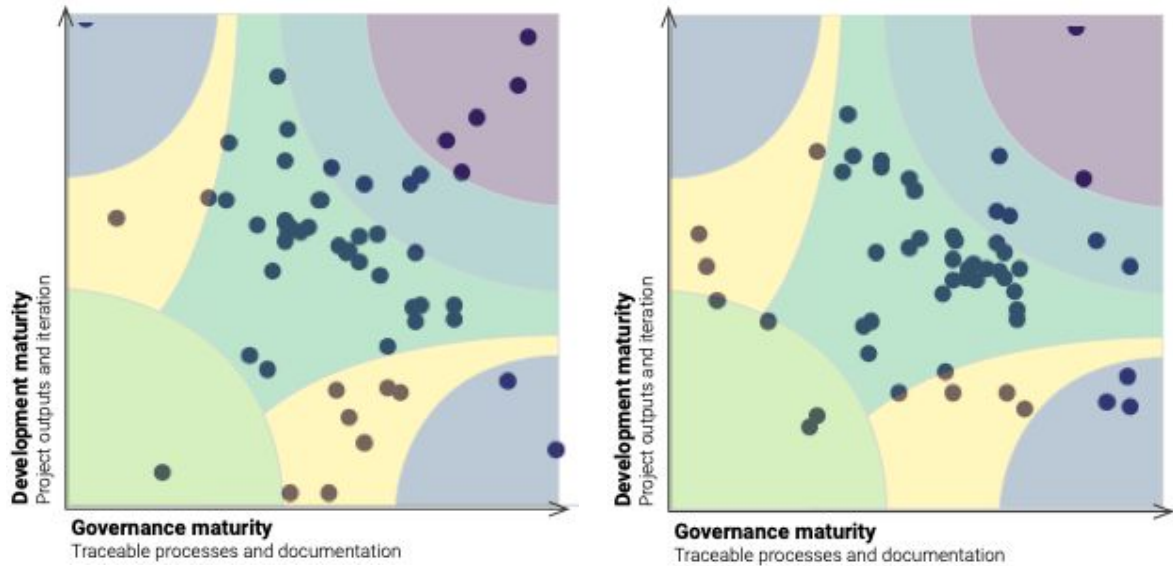


Figure 2: Value grouped by graph segment (n=57)

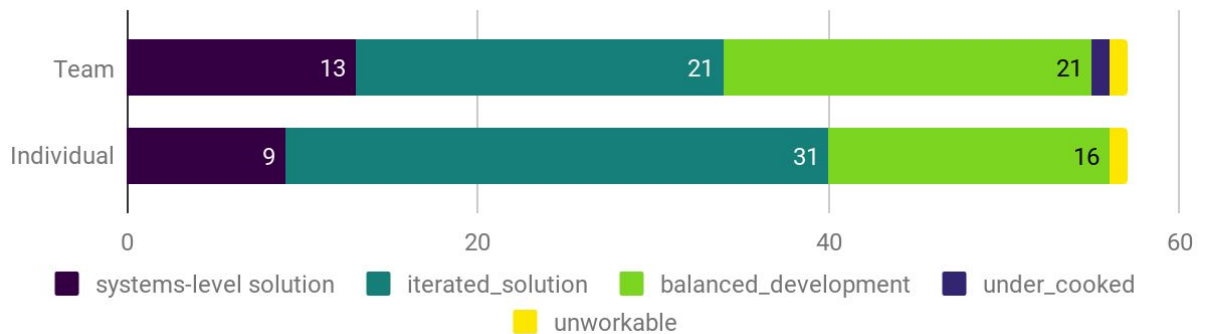
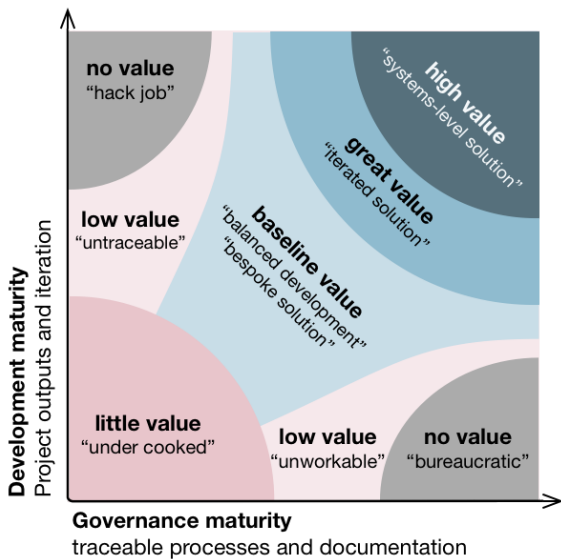
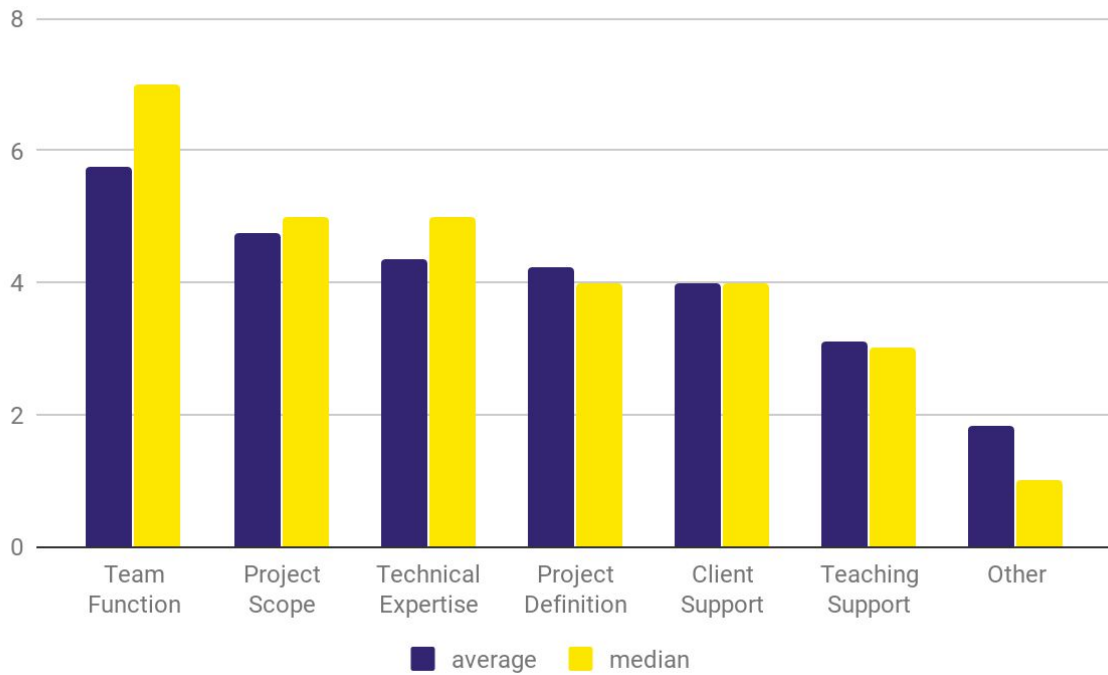


Figure 3: Reference - Value graph used for data captured in Figure 1



Q2: What was the most important factor for the success of ANY team in this course?

Figure 4: Factors that Influence Project Success



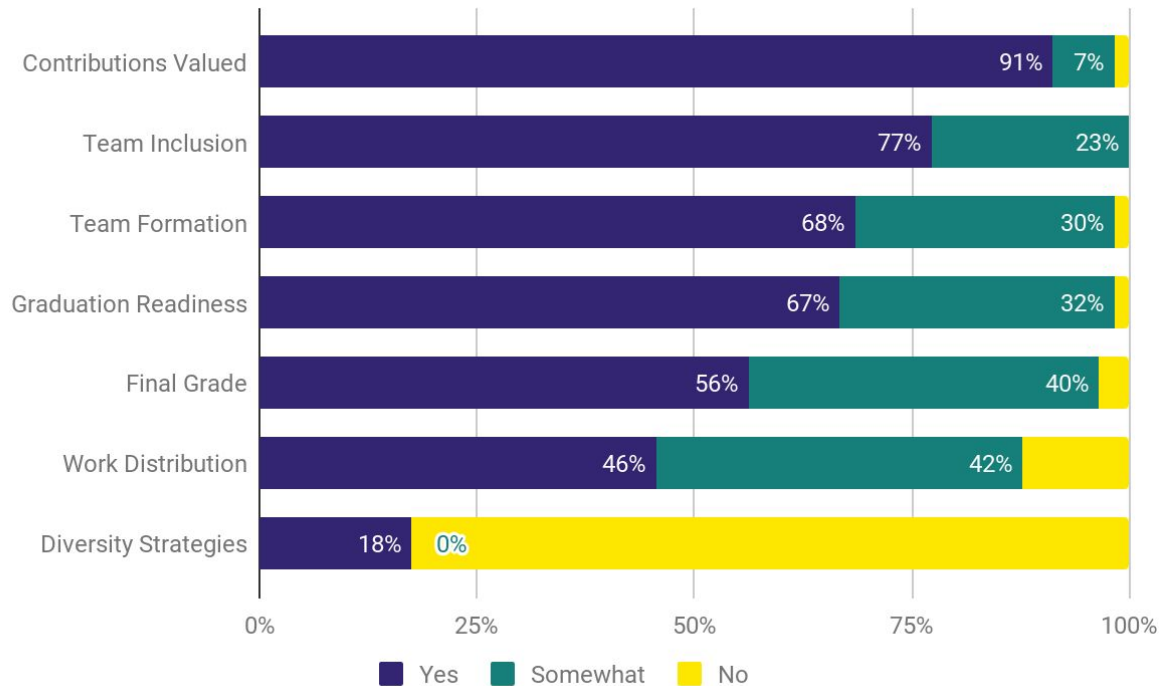
Note: average/median value based on scale 7=most important; 1=least important

Summary of Comments given as 'other':

- Budget
- Engagement in the project
- Having a fair peer review and assessment process
- Finding a project that works best for you
- Gaining support from experts understanding the problem
- Support from other stakeholders
- Willingness to learn and commit to your job

Q3: Perceptions of engagement and agreement for areas of activity in the course

Figure 5: Agreement levels across activities (n=57)



Questions asked

Contributions Valued	During meetings and group discussions, do you think your contributions (ie ideas and opinions) were equally valued compared to others in the group?
Team Inclusion	Do you feel like you were 'included' in your team?
Team Formation	On reflection, was the team formation and project selection process appropriate, given the goals of the course?
Graduate Readiness	Has this course improved your readiness to work as a graduate engineer?
Final Grade	Do you expect your final grade to reflect the quality of work you have put in?
Work Distribution	In your opinion, was there a fair distribution of work in your team, relative to expertise?
Diversity Strategies	Did you actively use any strategies to promote diversity in your team?

Summary of strategies used to encourage diversity

- Actively seek for feedback from each member on any issues regardless if it is their strength
- Ask every team mate about their ideas and opinions to improve their efficiency
- Members from different disciplines/majors/cultures treated with respect
- Involving team members in feedback and discussion; monitoring discussions
- Ensuring not to fall into stereotypical role assignment

Q4. If you could improve one aspect of this course, what would it be?

36 out of 57 people provided open-ended feedback.

Feedback has been sanitised (eg names removed) and categorised but not summarised.

[Chris's responses in blue](#)

Perceptions on Projects, Groups & Approach

- Provide more beneficial projects for students. For example, the ant tracking project is very interesting, and could help students in the future.
[Agreed. Please remember Capstone Project also as you go out into the workforce and have a project you might want to offer students](#)
- The tutors and convener doing a little bit of background into each proposed project to inform teams of early of any potential pitfalls that could hinder the project. An example of this was having no prior knowledge of requiring ANU ethics approval to perform testing of our device, which set the project back during a crucial period.
[I'll add Ethics to the list of questions in the Project Descriptions \(like budget, NDAs, etc\) - good one](#)
- I would say there should be a clearer expectation regarding the level of systems engineering that needs to be delivered as standard in the course.
[This is challenging - the indicators are clear about using ISO standards and INCOSE requirements, but you are also encouraged to tailor the process \(as is the advice, if you have read the standard\). At the end of the day, it needs to be "appropriate", and this is where there might be a difference in opinion.](#)
- Less document
[Agreed - see above. Hopefully you didn't waste any time on anything that wasn't delivering value!](#)
- Talking more about the system thinking instead of the document
[Agreed - same again](#)
[Agreed - see above. Hopefully you didn't waste any time on anything that wasn't delivering value!](#)
- My group was only a little bit diverse so maybe ensuring groups are a bit more diverse. This might be a bit of stretch but getting students from other colleges to participate and have real interdisciplinary groups would be interesting.
[This would be awesome. Hopefully we will start to see this happen. Other schools are definitely looking at what we're doing.](#)
- Student's skills and abilities should be considered as a key factor when choosing the project topics.
[Yeah. This is challenging too - there are lots of factors, and we are taking a lot on face value from both sides](#)

Perceptions on Assessment, Evaluation, Marks & Feedback

- The clarity of grade indicators, i.e, a better check on how the team is doing vs how it should be doing.
[Sure. I suppose I would encourage teams to try and think about this during reviews.](#)
- Base the marking criteria on the effort of the team instead of the more obvious things such as the project audit
[Hmm. I would hope these are similar things. Though, I could put all the effort in the world into a project, and not deliver any value to anyone.](#)
- Evaluate the project more based on project output rather than documentation
[I get this, but I think the balance around the value argument is right - I stand by the idea that good outputs need to be governed well. There is NOTHING in the course guide about doing documentation - this is just how most teams decide to do it.](#)

- Less workload and please give more time between each audit
Workload, I think, is a team-side issue. More time would be great, but I don't think we could do only two Audits
- Possibly getting feedback more often but only in small amounts. Like each tute just a small "Good, bad, average"
This is a great idea - perhaps could be used to think through the value of tutorials (there's more discussion of that below"
- There should be a statistic of people's abilities and skills. The results should be put on wattle to let all the participants see so that they can form a more well-structured team.
This is a good idea, but would be prone to exploitation. People have lots of skills, and others are really capable of picking things up. I agree that it would be good to have more data here, though.
- I personally feel that individual marks should not be capped but that the overall project is marked harsher. It would not be uncommon in the teams that I saw to see a 40% grade gap between the top really engaged students and the students who were putting in the bare minimum. +-10% does not really reflect the actual spread in expertise, workload and skills.
Yeah. Again, I think also a team load issue. But, by way of feedback, a handful of people were uncapped (at, say, 125% and 75%), but these details are not shared publicly (I think this is right). The other thing here also is that there is usually a good correlation between the Portfolio and Individual indicators (I'll share these if appropriate).
- I think when marking the project outputs, the tutors can think more separately on each project. Because the expected value and characteristics are different for different project.
Sure - I would hope that this is happening, more or less. I personally think that we get it pretty right.

Perceptions on Time & Workload

- More time to work on project
:)
- More time to complete the project. Or less assignments in other courses. If it could count as 12 units but still be a single semester would allow more dedication to the project and thus a more realistic experience of a real world project with more time dedicated to it.
I would love to get rid of other assignments! This is a great suggestion. Going forward, though, ENGN4221 will become a 12-unit course in about 2021, and you won't have to do ENGN4200 and ENGN4221 in your last year
- Out of your control, but I believe more time dedicated to the project work would have been better. The project seemed to go really quickly!
:)
- The workload of the course is more than twice of other courses, maybe the workload can be reduced a little bit.
- The workload of this course is a little high.
I think that these is an internal team thing. The way that I think about this is that if it has taken you twice the number of hours that you committed to on a project - even to get it done - the project scope wasn't right.. You're essentially working for half the price!

Perceptions on Clients

- Consistent support of clients over all projects
Yep - I suppose this is something that happens as we delve further into the 'real world'. We are developing a guide for project involvement. This is a risk, and it needs to be managed. One idea was to impose a handful of check-in things (eg client contact) as part of the format of each tutorial..

- Guaranteeing that clients are based in Canberra, so students working on their projects can have easy access to them [abbreviated].
Noted - I'll take this on board with projects
- To make sure the client is not too busy so students can get feedback in time instead of being so worried and did some useless work.
Agreed. Although, I think this is a little representative of the real world, and possibly 'valuable' in a very general sense..

Perceptions on Tutorials & Tutors

- Currently many teams treat tutorials as burdens rather than an opportunity to obtain feedback. My tutorial is somewhat similar to mini-audits. Since most teams are reluctant to share their set backs, maybe just make it compulsory for teams to name at least three areas that can be improved in each tutorial. Although forcing students do something is not a good educational method, at least teams can be more open and get more feedback. More productive meetings, maybe discussion regarding the weekly focus in the first 30 mins or so to bring everyone up to speed.
- The tutors - I don't think they brought much value to us
- Tutorial
- Tutorial
- Tutorials could be more useful or examples of what is expected could be shown.
There is something to 'workshop' here in the tutorials. This was raised at the mid-semester feedback, but it was decided (by the students) that no 'changes' were necessary. But this is a pain-point, and needs to be thought through. Something I think we'll try next semester is to put some better 'growth' structure around the tutorial. The idea above about "good/bad" etc is a good one

Perceptions on Events & Expertise

- More space at the Poster Showcase
Yeah, yeah - this was in my own reflection on Wattle. :)
- You are welcome to invite a few engineering experts for the final audit.
This is a great idea.

Other

- Quite happy with the course :)
- It's really tough to think of anything.
:)