

ENGN4300 Capstone Design Project Project Host Information - Capstone Design Project

Semester 2, 2025

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1. Introduction

The Australian National University (ANU) Engineering Capstone Design Project is the flagship team-based Systems Engineering course, offering students an authentic industry-relevant project experience that prepares them for professional practice and enhances their employability. The course's educational objective is for students to apply a Systems Engineering approach to address board problem statements and deliver tangible value to project hosts. Through a comprehensive design process -including requirements development, conceptual and detailed design, validation and verification, and systems documentation, students leverage the technical and professional skills gained during their studies. The course emphasizes teamwork, leadership, communication, project management and a professional approach to engineering design.

The Capstone Design Project is a year-long, two-semester course undertaken by 4th-year students, emphasising real-world application and value delivered to project hosts with minimal teaching time. The course enables students to independently manage project, focusing on achieving meaningful outcomes.

The Capstone Design Project aims to create value to all stakeholders, including the project host, broader stakeholders, the student team, and other associated teams. Value is defined as the combined advancement of project outcomes and governance through a Systems Engineering approach. While the approach is consistent, project outcomes are not prescribed, recognizing that each project presents unique goals and challenges.

The Capstone course employs a 360-degree feedback approach, referred to as the “many eyes” method (Figure 1), to monitor project progress. This approach integrates insights against multiple criteria from four key stakeholder perspectives: self-evaluation, peer (or “shadow”) feedback, tutor evaluation, and the project host’s perspective. By considering feedback across these multidimensional criteria, student teams gain a more comprehensive understanding of their project’s progress, as opposed to relying on a single feedback source that may reflect only the specific interests of one reviewer.

Figure 1: Block diagram of the Many Eyes Process

Figure 1: Block diagram of the Many Eyes Process

2. Project Host Role and Expectations

As a Capstone Project Host, the extent of your engagement with the project and your student team is largely at your discretion. However, to maximize the value of this experience, we strongly encourage regular communication and active involvement with your team.

The primary project host role/expectations for this program are:

- **Propose a project brief**
 - This will be used to advertise your project to the prospective students
- Complete a **Project Agreement** with the ANU
- Attend the **Project selection night**.
 - Project selection night will take place online on an evening in the first week of semester (Late February or July). Invitations and further information will be sent closer to this date.
- Regular (minimum of weekly or fortnightly) communication or meetings with the student team.
 - In the first 2–3 weeks, more frequent communication may be necessary to help the team establish momentum and address initial challenges, such as defining the project scope. During this time, students are also expected to collaborate with their project host to

develop a Concept of Operations (ConOps) document, which should be finalised before the first audit, scheduled approximately two to three weeks after the project's start.

- Provide feedback to the team through our audit process (survey's will be sent out during audit weeks).
- Provision of any training needed for the students to complete this project (if appropriate).
- Provision of available resources needed for the students to complete the project (which they cannot obtain through ANU or the microgrant program).
- Have a representative attend the [Project Showcase](#) event towards the end of the project.

3. Project scope

The project scope is intentionally flexible, allowing you and your student team to collaboratively define a preliminary scope that aligns with the team's skills and capabilities. However, the project must adhere to systems engineering processes, tools, and methodologies, as these are the primary areas of student assessment.

Each student is in their fourth year of an engineering degree, representing diverse technical backgrounds, and can allocate approximately 10 hours per week to the project over 12 weeks per semester. This equates to roughly 240 hours per student for the year. Teams typically consist of 4–6 members.

We encourage teams to work with you to determine the most effective use of their time, considering their other commitments, including other coursework, employment, internships, and project timelines. Ideally, students will complete their project hours during the teaching semesters, as teaching support is unavailable during breaks or between semesters.

The project scope may evolve over the year. If significant changes to objectives or deliverables occur, students should prepare a revised Concept of Operations (ConOps) document, ensuring it is reviewed and signed by all relevant stakeholders. If scope changes affect project risks, updates to the Work, Health and Safety (WHS) risk assessment and corresponding approvals will also be required. Our goal is to ensure that both you and your student team achieve meaningful outcomes and value from the project.

We have provided more information about the course and the expected outcomes from the students in the [course](#) and [assessment](#) guides located on the course website.

If at any time you feel that the output of your project is not meeting expectations, please reach out to the [course convener](#) and/or the tutor of your student team.

4. Cohort Size

The course accepts new student intakes at the start of each semester. Due to many students pursuing double degrees, enrolments can vary between semesters as they balance course requirements across engineering and other disciplines. As a result, some projects presented during the selection night may not progress within a given semester. However, with new students joining each semester, we encourage you to pitch your project again in the next round.

5. Project Selection Night

Project selection night is from 5 to 7 pm on an evening in late February or July (week 1 of semester), depending on the semester the project is offered. It will be run online, and full instructions for the night will be sent with an invitation via email.

The project selection night is run as a ‘two-way’ interview format, allowing you to know more about the students and identify those you would like to have in your team whilst enabling the students to learn more about each project and submit their project preferences.

While there are no strict requirements for presenting your project, many hosts find it helpful to prepare a brief pitch (1–2 minutes) and, where appropriate, include supporting materials such as photos of sites or equipment to enhance their presentation.

After the selection night, you have until noon the following day to submit your student preferences. While this is optional, we will make every effort to accommodate your choices. However, due to various factors involved in team formation, it is unlikely you will receive all your requested students. If you have specific arrangements, such as a pre-formed group, please inform us as soon as possible.

If you are unable to attend the project selection night, please let us know promptly. We recommend providing a recorded pitch or a written script, which we will share with the students via our learning management system.

6. Key Project and Course submissions

Key dates for the course can be found on our website <https://eng.anu.edu.au/courses/engn4300/>

6.1. Project Audits

Capstone includes four project audit weeks spaced throughout the year. Audits provide qualitative and quantitative feedback organised by the stakeholder group, allowing the team to judge how the project is progressing and how to improve. Acting on this feedback will help the student project team deliver value to their project host. Each audit has a specific purpose as detailed below.

Purpose of each audit

Project Audit	Purpose
Project audit 1	Establishes the project including the scope and goals through the creation of the Concept of Operations (ConOps) document.
	Establishment of governance processes, including risk analysis and project management plans.
Project audit 2	Reporting on progress of project goals and project governance.
	Draft system engineering design documents for example requirements analysis, systems architecture, and functional analysis as appropriate.
Project audit 3	Reporting on progress of project goals and project governance.
	Plans to test and validate the solution.
Project audit 4	Plans for the completion and handover of the project to stakeholders.
	Reporting on and evaluate the final outputs of the project goals.
	Finalise any project, governance and handover documentation.

6.2. Mid-project Presentations

The mid-project presentations take place shortly before the teams' second audit, offering students a valuable opportunity to convey the purpose and significance of their projects to an unfamiliar audience. This exercise focuses on developing their ability to communicate complex and detailed work effectively to individuals who may not be familiar with the specifics of their project. During the presentation, teams share their progress with the teaching staff and fellow students within the Capstone course, fostering feedback and collaborative learning.

6.3. Project Showcase

The project showcase event takes place in week 12 of the team's final semester. The event is a showcase of student and research projects from all parts of the College of Systems and Society. The student teams will present a poster, prototypes and displays (if appropriate) and prepare a 3-minute video pitch (available via QR code) that summarises their project and its value to stakeholders. We strongly encourage hosts to attend the showcase and will provide further details closer to the event.

7. Funding and Resources

The ANU has microgrants available for students to develop their projects/prototypes. These microgrants are easy to access and can go up to \$150 (or more in limited cases); your student team can reach out to the [course convener](#) for approval.

Additionally, College of Systems and Society students have access to resources available via the Engineering Technology Hub and the Engineering Workshop, including 3D printing, machining tools, basic workshop facilities, soldering and small electronics equipment, IT hardware/services, and an extensive suite of software packages. We also have limited storage space and project workspace on campus.

8. Project Agreement

As a formal recognition of the relationship between you, the student team, and the ANU, we will ask you to sign a project agreement. It sets out key aspects of the relationship, including the responsibilities/expectations of the different parties. Some examples to responsibilities/expectations include confidential information, intellectual property, work health safety, insurances etc. The agreements have been prepared by ANU legal.

For projects provided by hosts external to the ANU, two documents are required:

- [STP 01 Industry Project Agreement](#) - the agreement between the host and the ANU
- [STP G02 Student Group Project Agreement](#) - the agreement between the student(s) and the project host

DocuSign will be used to execute external agreements.

For projects provided by hosts internal to the ANU (for example undertaken internally with an ANU School or College), [STP G05 Internal ANU Student Group Project Deed](#) will be used. This is an agreement between each student and the ANU.

Preliminary agreements for each project, outlining agreement conditions but excluding student details, must be made available to students prior to project selection night to allow them to read and understand the conditions for each project and seek independent legal advice. If an agreement is not in place, we will be unable to offer the project. The course convener will contact you to discuss the agreements.

8.1. Intellectual Property

By default, ANU students own their intellectual property (IP) as outlined in the [ANU Procedure - Student intellectual property](#). The default position in the agreement is consistent with the ANU Procedure.

As the project is completed for course credit, the students will own their Assessable Work (that is any materials or works that a student creates in connection with their Project which is required for examination of assessment). An option exists for students to assign the Project IP (that is any intellectual property that a student creates in connection with their project that is not required for examination or assessment) to the project host. A licence options is also available. These options can be discussed with the [course convener](#).

8.2. Confidential Information

If your project is likely to have sensitive or confidential information accessible to students, please note this in your project proposal. Within this course, sensitive or confidential information may be accessed by the student project team working on your project and the shadow student teams and/or tutors in assessing and reviewing your student project team's work. All groups will be bound by confidentiality requirements where you have identified information as confidential.

Capstone requires students to present their work to the public at the [Project Showcase](#). This may present challenges for students subject to confidentiality agreements. However, it is usually possible to present work without violating such agreements. In all cases, whether subject to agreements or not, students should seek approval from you, their project host, and other relevant stakeholders before any public presentation of their work.

8.3. Insurance

The ANU has a general insurance policy to cover students working onsite for the entire duration of the Capstone program. However, each student will still need to notify the University of the locations that they are doing on-site work.

If you are planning any site visits or other activities for the students, please give them notice so that they can complete the required notification forms and submit them to the School of Engineering (it is a relatively quick process, so a couple of days is fine).

Students undertaking interstate travel may be required to complete ANU travel forms which may take more than a couple of days to process. The students should arrange this in consultation with the course convenor.

8.4. Risk Assessment

Students must complete a WHS risk evaluation for activities planned during the project. This includes activities conducted at the ANU or the host site with separate risk assessments required for each case.

If your project requires students to complete activities at your worksite or another non-ANU location, you should work with the students to complete a work health and safety assessment or induction, supervision and training and access to personal protective equipment as required. Approval from the School may be required for higher-risk activities.

9. Points of contact

To enquire about getting involved in Capstone please reach out to our Engagement & Impact team (Mike Hanauer and Cathy Zhou) - engagement.eng@anu.edu.au

Your student team is responsible for providing you with any information about the course that they have access to but if you need any more information, or have any questions you can reach out to:

- Our course email address - engn4300.css@anu.edu.au
- **Dr Zena Assaad** (Course Convenor) – zena.assaad@anu.edu.au
- Jenny Simmons (Course Administrator) – jenny.simmons@anu.edu.au
- The tutor for your team (you can get the name/email from your team or Jenny if you have not already been contacted).

10. Additional Information

You can find more information in the [course](#) and [assessment](#) guide. These guides are available via the course website in the Current Student section.

11. Version Control

11.1. Document Information

Document Information

This document	ENGN4300 Host Guide Download as PDF
Format	PDF preferred, also available as web page
Document type	Information and Procedures
Purpose	Overview of course requirements, governance and processes for project hosts offering projects in ENGN4300 Systems Design Project
Semester	Semester 1, 2025
Audience	Current or potential hosts
Contact	Dr Zena Assaad
Version	v2025 S1.1.0
Related content	ENGN4300 Course Outline, Course Governance and Assessment Guide

11.2. Change log

2025.S1.01: 29_11_2024

- Initial version S1 2025 - wording related to agreements updated

2025.S2.01: 04_07_2025

- Initial version S1 2025 - update email address and showcase information

2025.S2.02: 13_08_2025

- S2 2025 - update to Microgrants