Australian National University

ENGN4200—INDIVIDUAL PROJECT

Second Semester, 22 July–25 October 2019

Students undertake an individual engineering project, with supervision. Students are encouraged to put forward their own ideas for the individual project, or they may select a project from a range of ideas offered by researchers across the ANU. If the student initiates an idea, he or she must find a supervisor to accept the project. At the latest projects should be selected by week 1 of the first semester of the project. Once finalised projects should be registered by the student in ENGN4200 Wattle site. Students are expected to manage all aspects of their individual project from conceptualisation through the planning phase to the monitoring and control of the project performance and the ultimate achievement of the assessment deliverables. Details of the project process, roles and responsibilities and possible projects are given on the ENGN4200 Wattle site.

Mode of delivery	On campus (with possible off-campus supervision)
Prerequisites	ENGN3221
Incompatible courses	None
Co-taught courses	None
Course convener	Prof Wojciech Lipiński Office: Craig Building 35A, room C2.17 Phone: +61 2 612 57896. E-mail: `wojciech.lipinski@anu.edu.au`
Tutors	Ms Sha Shaharuddin Office: – E-mail: `sha.shaharuddin@anu.edu.au` Ms Ye Wang Office: Craig Building 35A, room C2.03.03 E-mail: `ye.wang@anu.edu.au`
Course representatives	Ms Harshita Jyoti E-mail: `u6096628@anu.edu.au` Arina Sigal E-mail: `u6089066@anu.edu.au`
Administrator	Ms Liv Duczek Office: CSIT Building 108, room N202 Phone: +61 2 612 54450. Email: `olivia.duczek@anu.edu.au`
Schedule	Lectures, tutorials and in-class consultations by the convenor and tutors: • Mon, 16:00–18:00, weeks 1–4, 7–9 Building 56, Leonard Huxley T Office hours by the convenor and tutors: • Thu, 16:00–18:00 Craig Building 35A, office rooms. Please call upon arrival using the phone located in the building entry area.

COURSE OVERVIEW

Learning outcomes

Upon successful completion of this course, students should be able to:

1. Identify a substantial research and/or development project including the problem the project seeks to address, its context and significance in contemporary engineering, scientific or research fields.
2. Scope the selected project appropriately and identify and determine knowledge, skills and methodologies required to complete the project.
3. Apply research skills and methodologies to identify, collate, summarise and critically evaluate relevant literature, data and sources.

4. Combine and demonstrate synthesis of new knowledge with the application of relevant underlying theory, skills, concepts and methodologies in relevant engineering and/or scientific fields.
5. Analyse, interpret, explain and evaluate results generated during the project and compare and contrast to existing work and literature where appropriate.
6. Communicate the project objectives, process, knowledge and results to practising engineers and scientists in written and verbal form.

Assessment summary

Task	Value	Due date			Date for return
		Sem 1 2019 normal load	**Sem 2 2019 normal load**	**Sem 2 2019 double load**	
Project registration	5%	–	9 August 2019		Two weeks after submission
Mid-term report	15%	–	25 October 2019	30 August 2019	Two weeks after submission
Thesis presentation	15%	14 October 2019	18 May 2020	14 October 2019	One week after presentation
Thesis report	65%	25 October 2019	29 May 2020	25 October 2019	Two weeks after submission

Research-led teaching

In this course, your supervisor(s) will directly guide you in your research project.

Feedback

Staff feedback

Students will be given feedback in the following forms in this course:

- Written comments in returned individual written assignments via Wattle.
- Verbal comments to the whole class and groups in lectures and tutorials.
- Verbal comments to individuals in office hours and individual meetings with supervisors.

Student feedback

ANU is committed to the demonstration of educational excellence and regularly seeks feedback from students. One of the key formal ways students have to provide feedback is through Student Experience of Learning Support (SELS) surveys. The feedback given in these surveys is anonymous and provides the Colleges, University Education Committee and Academic Board with opportunities to recognise excellent teaching, and opportunities for improvement.
For more information on student surveys at ANU and reports on the feedback provided on ANU courses, go to:
`http://unistats.anu.edu.au/surveys/selt/students/`
and
`http://unistats.anu.edu.au/surveys/selt/results/learning/`.

Policies

ANU has educational policies, procedures and guidelines, which are designed to ensure that staff and students are aware of the University's academic standards, and implement them. You can find the University's education policies and an explanatory glossary at `https://policies.anu.edu.au/`. Students are expected to have read the Academic Misconduct Rule available at `https://www.anu.edu.au/about/governance/legislation` before the commencement of their course. Other key policies include:

- Student Assessment (Coursework)
- Student Surveys and Evaluations

Required resources

Commonwealth supported students and domestic full-fee paying students generally must be able to complete the requirements of their program of study without the imposition of fees that are additional to the student contribution amount or tuition fees. Provided that its payment is in accordance with the Act, a fee is of a kind that is into any one or more of the following categories:

1. It is a charge for a good or service that is not essential to the course of study.
2. It is a charge for an alternative form, or alternative forms, of access to a good or service that is an essential component of the course of study but is otherwise made readily available at no additional fee by the higher education provider.
3. It is a charge for an essential good or service that the student has the choice of acquiring from a supplier other than the higher education provider and is for:
   (a) equipment or items which become the physical property of the student and are not consumed during the course of study; or
   (b) food, transport and accommodation costs associated with the provision of field trips that form part of the course of study.
4. It is a fine or a penalty provided it is imposed principally as a disincentive and not in order to raise revenue or cover administrative costs.

Field trip

No field trip is offered in this course. Individual arrangements may be made between students and their supervisors.

Additional course costs

Additional costs that students undertaking this subject incur are for printing posters.

Examination material or equipment

There are no in-class examinations in this course.

Recommended resources

- Outline at Programs and Courses: `https://programsandcourses.anu.edu.au/course/ENGN4200`
- Wattle page: `https://wattlecourses.anu.edu.au/course/view.php?id=28794`

COURSE SCHEDULE

Week	Topic	Assessment	Reading
0	–	–	–
1–3 (30–32)	Background study and topic definition	Project registration	Online materials
4–end (33–end)	Individual research	As outlined in assessment summary	Online materials

ASSESSMENT REQUIREMENTS

Assessment task participation

Participation in any course element is not mandatory. Missing assessment items will result in 0 mark for the corresponding assessment.

Assessment task 1: Project registration

The project registration is by submitting a single PDF file that includes:

- completed assignment cover page,
- completed project registration form: student, supervisor and examiner (which can also be your co-supervisor) information along with an outline of your research question/topic, background context, initial scope of project, key references and, if any, micro-grant application,
- IP agreement (for students with special IP considerations).

Your project registration form must be signed by you, your supervisor and your examiner.

Assessment task 2: Mid-term report

6-page review to highlight the work undertaken during the first half of the project and to provide feedback to incorporate into the reminder of the project.

Assessment task 3: Thesis presentation

5–10 minute poster oral presentation of your poster covering

- your name, ANU ID, project title and supervisor(s)/examiner names,
- research question,
- methodology or approach to address your research question,
- results,
- conclusions and outlook.

You will be asked to answer questions from the audience. Your poster should include supporting information about your project for your talk and to facilitate discussion.

Assessmen task 4: Thesis report

50-page document describing your research project.

Examination(s)

There are no in-class examinations in this course.

Assignment submission

- Electronic submissions are used in this course for all assignments.
- All submissions must include the assignment cover page and are to be uploaded as a single PDF file per assignment through the Turnitin links on the Wattle course website.
- A PDF copy of the assignment cover page can be found on the Wattle course page.
- You will be required to electronically sign a declaration as part of the submission of your assignment.
- Keep your own records of your assignments.

Extensions and penalties

Extensions and late submission of assessment pieces are covered by the Student Assessment (Coursework) Policy and Procedure. The Course Convener may grant extensions for assessment pieces that are not examinations or take-home examinations. If you need an extension, you must request it in writing on or before the due date. If you have documented and appropriate medical evidence that demonstrates you were not able to request an extension on or before the due date, you may be able to request it after the due date. No submission of assessment tasks without an extension after the due date will be permitted. If an assessment task is not submitted by the due date, a mark of 0 will be awarded.

Returning assignments

Students will obtain written and/or verbal feedback from their supervisors for all assessment items. The marks will be made available through the Wattle gradebook.

Resubmission of assignments

No resubmissions are possible in this course.

SUPPORT FOR STUDENTS

The University offers a number of support services for students. Information on these is available online at `https://anu.edu.au/students/`.

ENROLLMENT GUIDE

Normal enrollment

1. Semester 2 2019 (6 units) enrollment subject to a satisfactory completion of the pre-requisite course Engineering Management (ENGN3221). The selection of: (i) the project and (ii) the supervisor is normally carried out by the student the semester before commencing the project. At the end of Semester 2 2019, on advice of Course Coordinator, the result for Semester 2 2019 will be recorded as KU (continuing unit).
2. Semester 1 2020 (6 units) enrollment subject to achieving KU result for Semester 2 2019. At the end of Semester 1 2020 the course has a formal examination process, which generates a result for the course (N, P, CR, D, HD, RP, or DA).
3. The normal pattern of enrollment for a student may be varied by the Associate Director (Education) on the advice of Course Coordinator.

Course withdrawal and postponement

1. A student may withdraw from the Individual Project course without penalty on or before the census date of the enrollment semester of their project.
2. A student may not withdraw from the Individual Project course without penalty after the census date of the enrollment semester of their project.
3. After completing the first semester of the project, a student may postpone the continuation of the project pending approvals from the supervisor, the course convener and the CECS Student Administration.

Special considerations

1. A student may apply for Special Consideration during enrollment in the course to allow him/her to complete the course with an extension. If the extension is granted, the result for the course will be recorded as RP or DA until the examination process is completed.

Course suspension

1. A student may obtain permission from Associate Director (Education) on advice from Course Coordinator to suspend Individual Project course in Semester 2 and to resume the same Individual Project course in the following Semester. The result for Semester 1 (first time enrollment) will be KU and for Semester 2 will be DA.
2. A student who discontinues work on the Individual Project after the census date for Semester 1, and does not present extenuating reasons for this action, will receive the result NCN. The student must repeat the course following year in order to qualify for the BE Degree. Additional project requirements will be placed on students in this case to track progress and support them.
3. From time to time there may be special cases not covered by the above list. The individual cases will be considered by Head of Department on advice from Course Coordinator.

PROJECT REQUIREMENTS AND EXPECTATIONS

Degree requirements

1. The BE Degree in the Research School of Electrical, Energy and Materials Engineering requires the completion of the Individual Project ENGN4200 (worth 12 units, equivalent to 2 courses) as part of its prescribed program of studies.
2. The individual Project should be carried out and completed as a one continuous course of study, rather than two separate parts.
    - Enrollment is typically 6 units each in Semester 1 and 2, but may be 12 units during one Semester, or starting or finishing in Summer session.
3. The student should complete the Individual Project within the allocated time, and submit a thesis for examination, and any other examinable items as may be required.
4. The result achieved in this course has important consequences in awarding Honours level for the BE degree, and in nomination for a University Medal Award.

Work-load expectations

1. A normal course (6 units) involves on average 5 formal contact hours per week (which amounts to 20 formal contact hours per week for normal full time enrollment of 4 courses).
2. The Research School of Electrical, Energy and Materials Engineering expects each student to devote additional 2 non-contact hours of effort for each formal contact hour. This amounts to 60 hours of study per week for normal enrollment of 4 courses.
3. The work-load expectation for Individual Project is no less than one full day per week during each semester and mid-semester break.
    - It is strongly recommended that additional time is spent during summer holiday (early start involving literature survey, learning to use equipment, preparatory experiments, etc.).

Responsibilities

Student

1. Find a suitable project and supervisor.
2. Develop the Project Concept Document in consultation with your supervisor and complete the online PCD on the course Wattle site.
3. Establish a mutually convenient (to student and supervisor/examiner) pattern of meetings and work habits that are conducive to good progress.
4. Document progress throughout the project and discussions with supervisor in a Lab notebook, journal, blog, wiki, or other format as approved by the Supervisor.
5. Complete all assessment on time.

Supervisor

1. Ensure that the proposed project is of sufficient merit without being unduly difficult, and that it is feasible to complete within the allocated time. Assign an examiner for the project.
2. Meet with the student (on average once a week), providing academic/engineering guidance on the aims and conduct of the project, assisting in provision of resources required for the project, and advising on the best way to proceed.
3. Provide a mark for the midterm report (according to the guidelines provided).
4. Provide formal feedback about student progress and work practices at the midterm review and at the completion of the thesis.
5. Attend the thesis poster presentation given by the student.

6. Mark the thesis within 2 weeks of submission, consolidating the feedback of the examiner (according to the guidelines provided).
7. Notify the student and Course Coordinator if the work carried out falls significantly short of expectations.

Course convenor

1. Ensure that all students have identified supervisors and projects.
2. Ensure that the persons nominated as supervisors and examiners are eligible for their roles.
3. Provide guidance and issues-resolution.
4. Gather marks from supervisors and examiners.
5. Organise poster presentation schedule.
6. Present all results at the Examiners Meeting.
7. Submit the results to the Student Administrator (including KU, NCN for continuing students)

MICROGRANTS

Students can submit microgrant (up to $150) applications as part of their project registration document, to cover the costs that they might incur during their project tenures. The allowed budget categories are:

- hardware
- software
- web and IT services
- consumables

Application process

- Applications are to be developed by the student in consultation with the project supervisor as part of their context documents.
- Microgrant applications should include itemised project costing, and are to be limited to max. 0.5 pages.
- Applications are to be submitted as part of the context document (single PDF file).
- Microgrant applications are eligible for review after the context documents have been assessed by supervisors.
- The Course Convenor will notify the student and the supervisor of the outcome by email.
- A missing microgrant application form in the registration document disqualifies a student from awarding a microgrant.

CIC/IP AGREEMENT

Clients can propose an agreement, however the ANU has already prepared a Preferred Agreement that may be used as a starting point regarding the protection of IP. Students should follow the following process:

1. The client may propose an agreement, but we would prefer you start with the ANU Preferred Agreement.
2. Once you have an agreement ready to sign, you should seek your own independent legal advice before signing. Free legal services are available from both ANUSA and PARSA. If you do NOT obtain independent legal advice, this is your choice, however the delegate at ANU will not sign the Preferred Agreement without written acknowledgment that you have been advised to seek independent legal advice.
3. If you have signed the agreement, it will need to be submitted to the course administrator (`olivia.duczek@anu.edu.au`) for signing by the college delegate.

The Many Eyes Process is used and this requires examiners, tutors and students from other teams (shadows) to evaluate the work produced by a team. This means they will need access to the team's work and may need to be included in any agreements regarding IP.