

CEIC4954

Research Thesis Extension

Term 1, 2023



Course Overview

Staff Contact Details

Convenors

Name	Email	Availability	Location	Phone
Peter Neal	peter.neal@unsw.edu.au	Tue, 4-5 pm via the Thesis Office Hours meeting in Teams	Room 216, Hilmer Building (E10) – across the bridge from Level 2, SEB (E8)	+61-(0)2-9385-4814

School Contact Information

For assistance with enrolment, class registration, progression checks and other administrative matters, please see [the Nucleus: Student Hub](#). They are located inside the Library – first right as you enter the main library entrance. You can also contact them via <http://unsw.to/webforms> or reserve a place in the face-to-face queue using the UniVerse app.

If circumstances outside your control impact on submitting assessments, Special Consideration may be granted, usually in the form of an extension or a supplementary assessment. Applications for Special Consideration must be submitted [online](#).

For course administration matters, please contact the Course Coordinator.

Questions about the this course should normally be asked during the scheduled class so that everyone can benefit from the answer and discussion.

Course Details

Units of Credit 6

Summary of the Course

Research Thesis Extension is an inquiry-based learning course that allows students to deepen and/or broaden the scope of their thesis project. It is particularly recommended to students considering a research career and/or pursuing a research degree (such as a PhD). This course provides an authentic experience of the higher degree environment through the supervisor-student relationship, and the focus of assessment on developing a draft journal paper.

As in other the Research Thesis courses, the project a student undertakes must be a complex, open-ended problem that allows room for creativity, and the acquisition, analysis and interpretation of results. There must be multiple possible solutions or conclusions at the outset and sufficient complexity to require a degree of project planning from the student. The project will require students to bring together discipline knowledge and principles learned through academic study and professional experience. Students apply these principles to innovatively solve problems such as the development of a specific design, process and/or the investigation of a hypothesis.

Since this course expands the scope of your original thesis project (planned in CEIC4951 and refined in CEIC4952), you cannot take this course at the same as CEIC4951 or CEIC4952. Students normally take this course at the same time as CEIC4953 or in the following term. To enrol in this course students normally need to have a WAM of at least 75, as well as the approval of your project supervisor and the course coordinator. Apart from in exceptional circumstances, students should continue with the same supervisor and project as they had in CEIC4951, CEIC4952 and CEIC4953.

Course Aims

This course provides an opportunity for students to extend their thesis project by exploring their research problem in more breath and/or depth. The work students do for this course will build on the work completed in CEIC4951 and CEIC4952, and complement the work being undertaken for CEIC4953. This course aims to be especially relevant for students considering pursuing a research career in fields related to chemical engineering and food science, and is designed to introduce students to the ways in which research is practiced and communicated in higher degree environment.

Course Learning Outcomes

After successfully completing this course, you should be able to:

Learning Outcome	EA Stage 1 Competencies
1. Develop a design or a process or investigate a hypothesis following industry and professional engineering standards.	PE2.3, PE2.4, PE1.3, PE1.4, PE1.5, PE3.1, PE3.3
2. Critically reflect on a specialist body of knowledge related to their thesis topic.	PE1.4, PE3.4
3. Apply scientific and engineering methods to solve an engineering or food science problem.	PE2.1, PE2.2, PE3.4

Learning Outcome	EA Stage 1 Competencies
4. Analyse data objectively using quantitative and mathematical methods.	PE1.2, PE2.1, PE2.2, PE1.1
5. Demonstrate oral and written communication in professional and lay domains.	PE3.2, PE3.5

Professional Recognition of Course

CEIC4954 is part of UNSW Food Science specialisations approved (2021-2026) by the Institute of Food Technologists Higher Education Review Board (IFT HERB).

Relationship with the rest of your program and the discipline

Research Thesis Extension is a capstone course that requires you to employ knowledge and skills developed throughout the rest of your studies. The degree to which you rely on the knowledge from any one course will depend on your project. For example, thesis projects may involve you using your knowledge of chemistry and thermodynamics, your design and process modelling capabilities, or your skills in lifelong learning to develop expertise outside of your regular coursework.

All projects will require you to employ the professional skills you have developed. Good oral and written communication skills will be expected, not only for your assessments but also for the day-to-day activities like meetings and lab work. Teamwork skills are also essential as you work with your supervisor, other researchers, and technical staff.

Beyond university, Thesis provides you with an opportunity to demonstrate to professional bodies and potential employers that you can research and propose solutions to a significant problem, manage a large, open ended project, and communicate your findings in a professional manner.

Teaching Strategies

This is an experiential, enquiry-based learning course structured around single long-form open-ended project. Therefore, main learning activity is self-directed study or project work, at your own speed, under the guidance of your supervisor(s). In Research Thesis Extension, this will involve planning your project extension, executing your research plan, finalising your results with your supervisor and communicating your findings. Project-independent supporting materials including how-to guides are made available online.

The main source of feedback in this course is the regular meetings you have with your supervisor. These meetings are a great time to seek advice on project directions, get help with things you don't understand, brainstorm/debug issues that you're having, and have your progress evaluated. You should arrange regular weekly or fortnightly meetings with your project supervisor or co-supervisor. These meetings may be in person or online.

Finally, research is a always collaborative exercise. This is primarily found in your interactions with your supervisor(s) and the literature, but projects may also involve group discussions and collaborative work. It is important to engage with and use these activities for learning. However, as thesis is ultimately an individual project, your project deliverables should focus on your ideas and your work, and explicitly acknowledge the contributions of others.

Additional Course Information

Integrity and Respect

The [UNSW Student Code of Conduct](#) among other things, expects all students to demonstrate integrity in all their academic work, and to treat all staff, students and visitors to the University with courtesy, tolerance and respect.

In line with the comments at the end of this outline (see "Academic Honesty and Plagiarism"), generative AI systems (e.g. ChatGPT) are tools that all graduates should learn how to use responsibly and ethically. It can be a helpful partner for brainstorming, quickly helping you develop some starting points. It can be a patient (and usually reliable) tutor, explaining complex theory in simple terms. Like Wikipedia, it can be a helpful starting point, but it's not where you should finish.

Regardless of how apparently knowledgeable or verbose the system may be, it can't do the work for you. You will need to personally explain your work and your ideas throughout your thesis course in both formal and informal contexts. Thus, you need to know what you're doing and so you must not use a bot to write large portions your work. This is akin to [relying too much on the words of others](#) and is a form of plagiarism.

If you make use of text or other generative tools in the conduct of your thesis project, then you must

1. Ensure your supervisor is aware that you are using these tools for thesis work.
2. Formally and specifically acknowledge how you used it in your thesis submissions in
 - Your Acknowledgements section (in the same way as you would acknowledge the contribution of others to your project) and/or
 - The appropriate part of your work (e.g. Method or Results).
3. Cite the tool (like any other reference source) if you use ideas or text it generated.

Further, as research course students, you are also expected to comply with the [UNSW Research Code of Conduct](#), particularly the Principles of the Responsible Conduct of Research and Responsibilities of UNSW Researchers outlined in the code, as well as the University's [Human Research Ethics](#) and/or [Animal Research Ethics](#) Procedures. For more information visit the [UNSW Research Integrity Policies and Procedures page](#).

Time commitment

CEIC4954 is a 6 UOC course and has no final exam, therefore you are expected to spend a minimum of 150 hours (or 15 hours per week) during term to complete the requirements of this course. Most of this time will be spent in independent study or training.

Competence

Thesis is a capstone course and you are expected to be competent in all the material covered in the previous courses. Little time is available to remediate deficiencies in your knowledge.

Over the course of the term, you will be developing new competencies. The standards we expect, are explained by the marking rubrics provided. Your supervisor will apply these marking guides fairly and provide you with feedback so you can continue to improve over the three thesis courses.

Participation

You are expected to contact your project supervisor early and maintain contact regularly to carry out a suitable project. This would typically involve face-to-face meetings, but also includes email and other electronic means. Allow at least an hour per week for these activities.

You are expected to be proactive in identifying and completing any project dependent preparations including workplace health and safety requirements, and any training or access requirements. You should also be proactive in seeking feedback on your progress from your supervisor. The degree to which you take initiative and engage with your project work will be assessed in each thesis course.

You are encouraged to use the course forum to discuss challenges faced through this course, ask questions about course content, discuss solutions to tutorial and practice questions. It is expected that students will help each other, and the coordinator will contribute as required.

Further, as senior students you are expected to be able to work effectively on your own. This includes seeking our help with your project from your supervisor, lab manager or other people involved in the supervision of your project or the course.

Attendance and punctuality

We expect students to be punctual and attend at all scheduled meetings with the coordinator, your supervisor, or their team. If you are unable to attend a pre-arranged meeting, observe normal professional courtesies and inform the parties involved ASAP.

Allowed enrollment patterns

The following table sets out potential thesis enrolment patterns including CEIC4954

Thesis type	1st term	2nd term	3rd term	4th term
Three-course thesis	CEIC4951 (4 UOC)	CEIC4952 (4 UOC)	CEIC4953 (4 UOC)	CEIC4954 (6 UOC)
	CEIC4951	CEIC4952 + CEIC4953	CEIC4954	
	CEIC4951	CEIC4952	CEIC4953 + CEIC4954	
Single-course thesis	CEIC4005 (12 UOC)	CEIC4954		
	CEIC9005 (18 UOC)	CEIC4954		

Assessment

Unlike other Research Thesis courses, your final grade for CEIC4954 is determined solely by the marks you receive for assessments in this course. If you do not complete any assessment tasks, you will receive an AF grade and may repeat this course. If you complete one or more assessment items and still fail to satisfy the course requirements, you will receive an FL grade. If you receive an LE grade, it means that marks are missing for one or more of your assessments. You can check which marks are missing in the Moodle gradebook. When all the missing marks are received, we will forward your grade to Student Services for processing.

The Student Gateway provides more details on the UNSW [grading system](#) and [assessment](#).

Assessment task	Weight	Due Date	Course Learning Outcomes Assessed
1. Supplementary research plan	5%	5pm Friday, Week 3	1, 2, 3, 4, 5
2. Research seminar	15%	TBD with supervisor	1, 2, 3, 4, 5
3. Research paper	70%	9pm Friday, Week 10	1, 2, 3, 4, 5
4. Rejoinder	10%	9pm Monday, Week 13	1, 2, 3, 4, 5

Assessment 1: Supplementary research plan

Submission notes: This task will be submitted via the dedicated assignment activity on Moodle.

Due date: 5pm Friday, Week 3

Students will submit a supplement to the research plan submitted in CEIC4951 and reported against in CEIC4952. The plan should outline the additional work that the student plans to undertake in CEIC4954, the expected outcomes and impediments and the schedule for completing the work.

The plan will be marked by the student's supervisor using a standard rubric and comments returned to the student.

Assessment criteria

This task will be assessed using the following rubric.

Level	Mark band	Comments
Outstanding	18-20	The supplementary plan demonstrates a clear plan for extending the depth and/or breadth of the student's thesis project. The aims are clear, focused, achievable, and likely to result in an innovative outcome. Any hypotheses proposed are specific and clearly testable by

Level	Mark band	Comments
		<p>the proposed methodology.</p> <p>The plan explains a logical, discrete set of milestones, that are then embedded in a realistic and robust schedule, with good consideration of project management, lead time and project risk mitigation. A rigorous, literature-informed case is made for research methods to be employed.</p> <p>The document is very easy to read: well-written, with good spelling and grammar, appropriate language style, and excellent attention to formatting and referencing conventions.</p>
Good	15-17	<p>The supplementary plan demonstrates a clear plan for extending the depth and/or breadth of the student's thesis project. Aims are clear, focused, achievable, and may result in an innovative outcome. Any hypotheses proposed are specific and are clearly addressed by the proposed methodology.</p> <p>The plan outlines a set of the milestones with enough detail to believe the project is feasible, this leads to a realistic schedule; contingencies are provided to handle project risks and variations. The plan is clearly informed by the literature.</p> <p>The document is easy to read: writing is clear enough, with good spelling and grammar, reasonable language style, and good attention to formatting and referencing conventions.</p>
Solid	12-14	The supplementary plan demonstrates a reasonable plan

Level	Mark band	Comments
		<p>for extending the depth and/or breadth of the student's thesis project. Aims stated are clear, focused, and achievable. Any hypotheses proposed are specific and related to the proposed methodology.</p> <p>The plan appears to be feasible based on the details provided around methodology, work to be completed and outcomes delivered. The timeline is realistic but has limited contingencies for project risks and variations. There is limited justification from the literature.</p> <p>The document is reasonably easy to read: there may be some issues with spelling, grammar or style, but it doesn't affect comprehension; good attention to formatting and referencing conventions.</p>
Marginal	9-11	<p>The supplementary plan may lead to an extension in the depth and/or breadth of the student's thesis project. Project aims stated are clear but general. Any hypotheses proposed are related to the proposed methodology.</p> <p>There is enough of a plan to believe that the research project is feasible, however it lacks detail and justification from the literature. The proposed schedule is not detailed &/or consists of generic activities with little explanation of what they are intended to achieve or how project risks and variations would be handled.</p> <p>The document is difficult to read: writing is just ok, broad idea comes across; spelling and grammar have some flaws, not</p>

Level	Mark band	Comments
		quite appropriate language style. Some attempt has been made to follow formatting and referencing conventions.
Deficient	0-8	<p>The supplementary plan appears unlikely to results in the extension in the depth and/or breadth of the student's thesis project. Project aims are unclear or inappropriate. Any hypotheses proposed unlikely to be answered by the proposed methodology.</p> <p>The research plan is not present, does not have sufficient detail to demonstrate what the project would deliver, or defines a project that does not meet expectations. The schedule is not present or does not demonstrate how the student would successfully complete the project. Little attempt has been made to describe how the project would handle project risks and variations.</p> <p>Much effort is required to read and understand the document: writing is poor, many mistakes with spelling and grammar, and possibly inappropriate language style (e.g. too informal). There is little attention given to formatting and referencing conventions.</p>

Assessment 2: Research seminar

Assessment length: 20mins plus Q&A

Due date: TBD with supervisor

Students will communicate their research and its results in a seminar for an audience consisting of their supervisor's research group, several members of academic staff and/or invited experts. The seminar presentation is intended primarily for a specialist audience.

The seminar will complement the presentation given as part of CEIC4952 Research Thesis B and focus

on the additional work completed as part of CEIC4954.

Students will receive feedback in three forms:

1. Discussion with their supervisor before giving the seminar,
2. Q&A session at the end of the seminar, and
3. Marks from the audience against a standard rubric.

Assessment criteria

This task will be assessed using the following rubric.

Descriptor	Poor	Deficient	Adequate	Adept	Outstanding
Mark band	0-2	3-4	5-6	7-8	9-10
Content (40%)	<p>This is completely unsatisfactory work. It is substantially incomplete and / or incoherent.</p> <p>It is unclear that the student understands what they are doing or what their results mean.</p> <p>The presented work does not address the stated project aims or contains major problems that the student should reasonably have been aware of but did not address.</p>	<p>This is deficient work. There are obvious and substantial problems with what was presented and cast the conclusions into doubt.</p> <p>The student demonstrates some understanding of the meaning of their results.</p> <p>The presented work is not at all challenging and yields entirely expected results – the student does not appear to appreciate this.</p>	<p>This is marginal or competent work. While it contains some errors, but they are unlikely to undermine the main conclusions.</p> <p>The student shows a reasonable understanding of the meaning of their findings.</p> <p>They have interpreted meaning from the results but have overall not succeeded in linking the components of their research together as a coherent scientific story.</p>	<p>This is proficient or good work. Though it may contain a few errors they are unlikely to undermine their eventual findings.</p> <p>The student demonstrates a good understanding of the meaning and implications of their findings.</p> <p>The student has assembled the pieces of their research project (which could include literature, different sets of experiments or measurements, simulations or analyses) into a coherent scientific story.</p>	<p>This is excellent or exceptional work. It appears to have been completed without errors.</p> <p>The student demonstrates a sophisticated understanding of the meaning and implications of their results.</p> <p>The student has achieved something unexpected, thoughtful, or original, such as a novel perspective or theory.</p>
Q&A (40%)	The student is	The student	The student	The student	The student

Descriptor	Poor	Deficient	Adequate	Adept	Outstanding
Mark band	0-2	3-4	5-6	7-8	9-10
	effectively unable to answer questions about the project.	attempts to answer questions about the project but clearly doesn't really understand substantial parts of the work properly.	can answer some questions about the project and does not understand others. They make some use of evidence in their answers.	understands all the questions and can answer most of them. They make good use of evidence to support their answers.	listens carefully and answers questions easily and directly – they make excellent use of evidence to support their responses.
Communication (20%)	<p>The presentation is incoherent or incomplete.</p> <p>The visual aids diminish understanding. There are multiple deficiencies with the visual aids.</p> <p>The student is unable to communicate their ideas or in comprehensible.</p>	<p>The presentation is structured in a confusing manner &/or does not keep to time.</p> <p>The visual aids are not adequate.</p> <p>The student is hard to understand and struggles to communicate their ideas.</p>	<p>The presentation is structured logically, keeps close to time.</p> <p>Visual aids are adequate.</p> <p>The student is comprehensible and can communicate their ideas to the audience.</p>	<p>The presentation is structured logically, keeps to time and generally flows well.</p> <p>Visual aids support understanding.</p> <p>The student communicates their ideas to the audience clearly.</p>	<p>The presentation is structured logically, keeps to time and flows smoothly.</p> <p>Visual aids enhance understanding.</p> <p>The student communicates their ideas to the audience in a clear and engaging manner.</p>

Assessment 3: Research paper

Assessment length: 8,000 words

Submission notes: This task will be submitted via the dedicated workshop activity on Moodle. You will not be able to submit your Manuscript without receiving a satisfactory grade for your Project Specification.

Due date: 9pm Friday, Week 10

Students will write a paper manuscript for publication in reputable journal or conference proceedings relevant to the project's topic area. It should document the work completed by the student in both CEIC4954 and their other thesis courses. The supervisor and any other contributors should be credited as co-authors when appropriate, with contributions explained in a [CRedit statement](#) before the acknowledgements section. Structure and format the manuscript in accordance with the target

publication's style guide. The manuscript does not need to have been submitted for publication but will be partly assessed in terms of its readiness for publication.

Students are to submit three things:

1. The final version of the Thesis as a Microsoft Word or OpenDocument Text file,
2. The Turnitin Similarity Report for the final version of the Thesis as a PDF file, and
3. An archive file (i.e., zip file) containing supporting project files (consult your supervisor on what to include). This should include draft theses/papers, results files, program code, spreadsheets, etc., it may also include a digital notebook (if you used an electronic notebook). The maximum file size is 200 MB, so you may need to split the files across up to three zip files. Alternatively, you may share the files from your UNSW OneDrive and paste the link in the text entry section of the submission form.

The proposal will be marked by at least two reviewers using a standard rubric and comments returned to the student.

This assignment is submitted through Turnitin and students can see Turnitin similarity reports.

Assessment criteria

This task will be assessed using the following rubric.

Level	Rejected without review	Rejected following review	Revise and resubmit	Accept (major revisions)	Accept (minor revisions)
Mark band	0-8	9-11	11-15	15-17	17-20
Explaining the background and putting the results in context (20%)	Aims not clear – The student hasn't done a good job explaining the research aims to the reader - I'm not really sure what this is about.	Reason for research not clear – I understand the project aims but the student has not made it clear to the reader how it is connected to the background - why is this aim being pursued? What is the hypothesis being tested? What is the broader significance?	Background clear - results not contextualised – The student makes the project background clear to the reader, and the significance of the research aim within a broader context. The student has not been able to take a step back and assess the significance of their results.	Background and aims are clear, context is incomplete – The student makes the project background clear to the reader, and the significance of the research aim within a broader context. The literature review is comprehensive but may be lacking depth of insight. The student has made a	Background to research and significance of conclusions reached are clear – The student makes the project background clear to the reader, and the significance of the research aim within a broader context. The student also makes a realistic assessment of the significance of their results in this context.

Level	Rejected without review	Rejected following review	Revise and resubmit	Accept (major revisions)	Accept (minor revisions)
Mark band	0-8	9-11	11-15	15-17	17-20
				reasonable attempt to assess the significance of their results, but it is either not realistic, or does not follow logically from the arguments presented.	The background section is concise, comprehensive and insightful.
Execution of the research project, quality of analysis, discussion of results (50%)	Clearly deficient. Work at this level is clearly deficient - in not addressing the stated project aims or in containing major problems that the student should reasonably have been aware of but did not address in the thesis.	"Thin" results, lacking intellectual engagement. The student has completed a body of work and presented some results but not succeeded in interpreting meaning from them (=intellectual input is largely absent from the discussion, which is essentially equivalent to observation of the results). Performance at this level may also indicate a lack of engagement with the project, sometimes evidenced as a "thin" or "one-	Several components to the research work, not coherently linked. The student probably has a number of components to their research, such as literature, experiments, designs, simulations etc. They have interpreted meaning from the results but have overall not succeeded in linking the components of their research together as a coherent scientific story. There's no clear "big picture".	Solid, coherent work, linking all the research components together into a consistent story. At this level the student has assembled the pieces of their research project (which could include literature, different sets of experiments or measurements, simulations or analyses) into a coherent scientific story. Overall, you are left with a clear and convincing picture of what the research question was and what the answer is (along with its caveats).	Solid, coherent and consistent story PLUS something unexpected. Student would have to have achieved as at the previous level but additionally has achieved something unexpected, thoughtful and original, such as a novel perspective or theory. This requires deep thinking of the student.

Level	Rejected without review	Rejected following review	Revise and resubmit	Accept (major revisions)	Accept (minor revisions)
Mark band	0-8	9-11	11-15	15-17	17-20
		dimensional" investigation characterised by attempted padding.		A student is generally not going to be able to achieve this if there are conceptual or methodological problems with their work, or if their review of literature is inadequate.	
Conclusions and value added (20%)	<p>No value.</p> <p>There are obvious and substantial problems with what was presented – the work as it stands has no value because it doesn't "hold water".</p>	<p>No interesting results.</p> <p>The work doesn't really add any significant value. The standard and volume of the work is not suitable for publication without extensive revision and expansion.</p> <p>The student does not appear to appreciate that the work is not at all challenging and yields entirely expected results.</p>	<p>Minimal wider value without significant extra work.</p> <p>The presented work adds some value through the improvement of "local knowledge" (e.g. improved techniques, additional data) but needs significant work before it could be considered for submission.</p> <p>The student worked well but did not push themselves harder to make any new discoveries or interpretations. Therefore, conclusions are limited, and the discussion of</p>	<p>Will have wider impact with some further work.</p> <p>This manuscript is a strong draft but will require some expansion and revision before submission could be considered. Further work required may include additional experiments, analysis or discussion.</p> <p>The student has included good, thoughtful discussion of limitations and provided insight into future work on this project or new</p>	<p>Will have wider impact.</p> <p>This is valuable work. This manuscript is of a high standard and is close to being ready for submission. Once revised, the work would have a high chance of being accepted for publication with only minor corrections.</p> <p>If not used as the basis for a peer-reviewed publication, it could be edited into another form of professional dissemination appropriate to the field (e.g. patent application, trade</p>

Level	Rejected without review	Rejected following review	Revise and resubmit	Accept (major revisions)	Accept (minor revisions)
Mark band	0-8	9-11	11-15	15-17	17-20
			future work is predictable.	avenues of research which could be followed.	publication, workshop, etc.).
Document Presentation (10%)	<p>The document is poorly structured, does not cohere or shows a lack of understanding of the purpose of its sections.</p> <p>Much effort is required to read and understand the report: writing is poor, many mistakes with spelling and grammar, and possibly inappropriate language style (e.g. too informal)</p> <p>Presentation is poor to the extent that it impedes reading of the document. Examples include inconsistent formatting, and unlabelled figures or tables.</p> <p>References are either not cited</p>	<p>Document is not at a professional level but does make use of headings and sub-headings to indicate document structure.</p> <p>The report is may be difficult to read: writing is just ok, broad idea comes across; spelling and grammar have some flaws, not quite appropriate language style.</p> <p>Although figures and tables are labelled, the formatting is unclear and/or inconsistent to the extent that the reader can lose track of the context when reading.</p> <p>References in text match reference list (and vice versa) and are</p>	<p>The document makes some use headings and other stylistic conventions to indicate document structure.</p> <p>The report is reasonably easy to read: there may be some issues with spelling, grammar or style but it doesn't affect comprehension .</p> <p>Figures and diagrams are generally fine, although there may be some issues with the graphical presentation of data - poor choice of axes, overcrowding, poor use of chart space, etc.</p> <p>References in text match reference list (and vice</p>	<p>The document makes good use headings, sub-headings and other stylistic conventions to indicate document structure.</p> <p>The report is easy to read: writing is clear enough, with good spelling and grammar, and reasonable choice of language style.</p> <p>Graphical elements (figures, tables, etc.) are labelled, largely formatted consistently and cited correctly.</p> <p>References in text match reference list (and vice versa) and are cited properly.</p>	<p>The document follows a clear and logical structure indicated using headings and other conventions.</p> <p>The report is very easy to read: well-written, with good spelling and grammar, and appropriate language style.</p> <p>Text spacing aids readability. All aspects of formatting are consistent throughout the document. Graphical and tabular presentation of data is appropriate, clear, consistent and economical. Discerning placement of graphical elements (figures, tables, etc.), whether in the body of</p>

Level	Rejected without review	Rejected following review	Revise and resubmit	Accept (major revisions)	Accept (minor revisions)
Mark band	0-8	9-11	11-15	15-17	17-20
	or cited inconsistently.	mostly cited correctly.	versa) and are cited properly.		the work or in the appendices. References in text match reference list (and vice versa) and are cited properly.

Assessment 4: Rejoinder

Submission notes: This task will be submitted via the dedicated activity on Moodle.

Due date: 9pm Monday, Week 13

Upon receipt of the reviewers comments on their paper manuscript. Students will respond to the reviewers comments and submit a revised version of their manuscript.

Students will receive marks against a standard rubric and a final 'editor's' decision and comment on the paper.

Assessment criteria

This task will be assessed using the following rubric.

Level	Mark band	Comments
Outstanding	9-10	<p>The student provides a rejoinder that responds to all reviewer comments in an insightful and cogent manner, and an improved manuscript.</p> <p>The rejoinder demonstrates an extensive understanding of the criticisms made and explains how comments have been addressed in convincing terms.</p> <p>The document is very easy to read: well-written, with good spelling and grammar, appropriate language style, and</p>

Level	Mark band	Comments
		excellent attention to formatting and referencing conventions.
Adept	7-8	<p>The student provides a rejoinder that responds to all reviewer comments in a reasonable and coherent manner, and a revised manuscript.</p> <p>The rejoinder demonstrates a clear understanding of the criticisms made and explains how comments have been addressed in detailed terms.</p> <p>The document is easy to read: writing is clear enough, with good spelling and grammar, reasonable language style, and good attention to formatting and referencing conventions.</p>
Adequate	5-6	<p>The student provides a rejoinder that responds to all reviewer comments, and a corrected manuscript.</p> <p>The rejoinder demonstrates a sound understanding of the criticisms made and explains how comments have been addressed in general terms.</p> <p>The document is reasonably easy to read: there may be some issues with spelling, grammar or style but it doesn't affect comprehension; good attention to formatting and referencing conventions.</p>
Deficient	3-4	<p>The student provides a rejoinder that only responds to some reviewer comments, and/or does not provide a revised manuscript.</p> <p>The rejoinder demonstrates a basic understanding of the criticisms made and attempts to explain how they have been addressed.</p>

Level	Mark band	Comments
		<p>The document is difficult to read: writing is just ok, broad idea comes across; spelling and grammar have some flaws, not quite appropriate language style. Some attempt has been made to follow formatting and referencing conventions.</p>
<p>Poor</p>	<p>0-2</p>	<p>The student provides a rejoinder that only responds to some reviewer comments, and does not provide a revised manuscript.</p> <p>The rejoinder demonstrates a little understanding of the criticisms made and/or fails to explain how they have been addressed.</p> <p>Much effort is required to read and understand the document: writing is poor, many mistakes with spelling and grammar, and possibly inappropriate language style (e.g. too informal). There is little attention given to formatting and referencing conventions.</p>

Attendance Requirements

Students are expected to attend all scheduled meetings with supervisors, and if applicable, co-supervisors and research groups. Students in Thesis Extension should also be regularly attending the lab (or equivalent workspace) to complete their planned project work.

Course Schedule

Individual project schedule

There are no set lectures, workshops or lab classes for this course. In Thesis B you refined your project plan for Thesis C. One of your first tasks in this course is to prepare a supplementary plan with your supervisor for Thesis Extension and then get to work.

Remember to set aside some time each week for project management work - review and update your Gantt chart, project risk analysis and resource requirements. You should also include project management as a standing item in your regular meetings with your (co-)supervisor.

Thesis Office Hours

The one regular meeting for the whole class are the weekly [Thesis Office Hours](#) session at 2-3pm on Mondays with the Course Coordinator. This is an optional online consultation time with no fixed agenda. Join if you want help with anything about this course and its assessments - questions may also be asked anonymously via the [Anonymous Questions](#) tab in the [Course QandA](#) channel on Teams.

Project specific questions should be directed to your supervisor.

Resources

Prescribed Resources

The [Moodle page](#) for this course is very important. As well as being a venue for the assessment information, submission and feedback, there are links to resources, advice, and guidance. While, the [Research Thesis Projects page](#) (enrollment code co3shyh) provides information about supervision, answers to FAQs and advice on enrolment options.

[Microsoft Teams](#) will be used as the main discussion platform. You can ask questions there at any time, or during the weekly office hours session.

You also have access to 3 hours of Smarthinking tutor time. Please see the course Moodle page for instructions on how to use this service.

Recommended Resources

Your supervisor will advise you of books, journal articles and websites where you may find information as a starting point for your research project. After that, it is your responsibility to search out and evaluate information. Students are strongly encouraged to make use of a [reference management system](#) like EndNote, Mendeley or BibTeX. The Student Gateway also provides guidance on the particular forms of written communication found in thesis courses:

- [Literature Reviews](#)
- [Research Proposals](#)
- [Honours Theses](#)

Study space for project courses

Students enrolled in selected project- and laboratory-based courses are granted access to Room 102 on Level 1 of the Science and Engineering Building (Map Ref. E8). Access to this space is subject to the following conditions:

- Students must follow any directions from teaching and technical staff.
- This space is provided for private study and/or small group project meetings related to courses taught by the School of Chemical Engineering.
- Some classes have booked this space and students should vacate the space during these classes.
- Students using the space are expected to leave the space in the same or better condition than they found it. Keeping this in mind, limited consumption of food and drink is permitted.

Failure to observe any of these conditions may result in your access being revoked.

Course Evaluation and Development

We want your feedback on this course whether positive or negative. You can provide verbal or written feedback directly to the course coordinator, through our course's discussion forum or through the University's myExperience survey.

Feedback we received from previous offerings of this class have resulted in us

- Refining the assessment criteria
- Providing more assistance in written communication via the Smarthinking service.
- Creating online 'office hours'

Laboratory Workshop Information

The requirements for risk management and lab access will differ between projects. If you have any questions about risk management policies and procedures, please contact the Faculty's Health, Safety & Environment Team (eng.gen.hse@unsw.edu.au).

UNSW Supervised Projects

If your project being directly supervised by UNSW staff, you should consult with your supervisor about risk management for your project.

1. The [School's General Safety](#) page provides an introduction to the University safety system and School-specific arrangements, as well as safety induction information for the SEB (E8), Hilmer (E10), Tyree (H6) and Chemical Sciences (F10) Buildings. All students should at least complete Module 1 which introduces general safety procedures in the School of Chemical Engineering.
2. All projects will involve some desk or office-based activities (e.g. preparing reports, writing code, running simulations). There are risks associated with these activities that are not necessarily low. You should visit the UNSW Office Safety Toolkit page (<https://safety.unsw.edu.au/office-safety-toolkit>) to learn about safety in an office or desktop practice. The pages on Office Hazards and Risks and Workstation Setup will be particularly useful.
3. If your project involves laboratory or field work, you will need to complete the School of Chemical Engineering approval process. The steps involved are outlined on [this webpage](#). To complete this process, you will have to fulfill various training and documentary requirements. Therefore you should allow several weeks to complete this process.

Industry Supervised/Hosted Projects

If your project is being hosted/supervised by an external organisation (e.g. a company or research organisation), then you need to comply with that organisation's risk management policies and procedures.

1. You still need a UNSW supervisor – please consult with them about how they will be involved with your project – at the very least, they will be responsible for the academic administration of your project. They may wish to meet with you periodically to discuss your progress.
2. For the purposes of workplace health and safety legislation, you are considered a worker of that company and they are responsible for your safety.
 - If you are not being paid by the organisation for your thesis work, you are covered by the University's [personal accident](#) and [public liability](#) insurance policies. A certificate of currency can be supplied.
 - If you are being paid by the organisation to conduct your thesis work, then you should be covered by their insurance policies. Please check with your industry supervisor.
3. Finally, you **must** formally ask permission to do your project in industry. Do this by completing and submitting the "Application for distance thesis study" form on Moodle. Seeking formal permission ensures there is no confusion about why you are working onsite with an external

organisation.

For more information, please read the guides on moving from Industrial Training to Honours, and for Thesis in Industry on the [Research Thesis Projects page](#).

Project ethics approval

Does your thesis involve other people doing something for you? If so, it may require ethics approval.

The basic principle is that if you want people to provide you with something, even if just 5 min of their time to answer questions, then you should (i) treat them with suitable dignity and (ii) ensure any possibility that they may be badly affected is absolutely minimised.

When research at UNSW involves people, then it come under the oversight of the UNSW Ethics Committee which must give approval before it proceeds.

You will need to get approval, if your project involves any of the following (more than one may apply):

- a survey, even if done on-line
- an interview, focus group, or other such “qualitative” method
- data mining when individual identities might be revealed
- behavioural observation, e.g. people using something, choices people make, on-line activities
- recording or photography of people, even if in public spaces
- experiments on human reactions (or other abilities)
- human performance, e.g. running, falling, playing music
- testing a device (on people)
- tasting or smelling, e.g. foods
- and, of course, drug trials, body tissues and other medical activities.

Also, projects involving animals will need ethics approval. If your project does require approval, in the first instance, discuss this with your Supervisor.

Project confidentiality and intellectual property

Thesis project sometimes have information restrictions imposed upon them, typically a confidentiality agreement for industrially linked projects. If you are unsure whether this applies in your case, consult your supervisor.

If your project is subject to this kind of restriction you will need to ensure that any files you submit to Moodle are encrypted prior to upload and that the parties who have signed the relevant agreement are given copies of the password. Please seek advice from your supervisor in relation to hardcopy hand-in.

Further, students and academic supervisors may be asked to enter into a confidentiality or non-disclosure agreement. Students are entitled to seek independent legal advice before signing such an agreement. University staff should seek advice from the Research Contracts Office &/or UNSW Legal.

Distance study

It is possible to complete your entire project by distance.

You should discuss the particular arrangements for your project with your supervisor. This should include the nature of your project (e.g. types research/design, access to data), how you will meet and how often (at least fortnightly and preferably by video call), accessing to literature and software (e.g. via the UNSW Library, myAccess &/or UNSW VPN/China Access Network).

Then you must complete the "Application for distance thesis study" form available on Moodle. Since you probably won't have a supervisor at your off-campus location, please a reason like "unable to visit campus because of travel restrictions" in the distance supervision field. Next get your supervisor to sign the application. Finally, upload your application using the Upload form via the link on Moodle. You will receive notification in your email if your application is approved or rejected. The notification on Moodle may not change immediately, as it is a manual process.

Note: It is probably best to apply for permission for distance study for all your remaining thesis courses. If you do that, your permission status will be rolled over into future courses and you won't have to apply again next term.

Submission of Assessment Tasks

In the School of Chemical Engineering, all written work will be submitted for assessment via Moodle unless otherwise specified. Attaching cover sheets to uploaded work is not required unless specifically requested for an individual assessment task; when you submit work through Moodle for assessment you are agreeing to uphold the Student Code.

Some assessments will require you to complete the work online and it may be difficult for the course coordinator to intervene in the system after the due date. You should ensure that you are familiar with assessment systems well before the due date. If you do this, you will have time to get assistance before the assessment closes.

All submissions are expected to be neat and clearly set out. Your results are the pinnacle of all your hard work and should be treated with respect. Presenting results clearly gives the marker the best chance of understanding your method; even if the numerical results are incorrect. Please make it easy for the markers who are looking at your work to see your achievement and give you due credit.

Marking guidelines for assignment submissions will be provided at the same time as assignment details to assist with meeting assessable requirements. Submissions will be marked according to the marking guidelines provided.

Late penalties

Unless otherwise specified, submissions received after the due date and time will be penalised at a rate of 5% per day or part thereof (including weekends) and will not be accepted more than 5 days late. For some activities including Exams, Quizzes, Peer Feedback, and Team Evaluation surveys, extensions and late submissions are not possible.

Special consideration

If you have experienced an illness or misadventure beyond your control that will interfere with your assessment performance, you are eligible to apply for Special Consideration prior to submitting an assessment or sitting an exam.

UNSW has a [Fit to Sit / Submit rule](#), which means that if you attempt an exam or submit a piece of assessment, you are declaring yourself fit enough to do so and cannot later apply for Special Consideration.

For details of applying for Special Consideration and conditions for the award of supplementary assessment, please see the information on UNSW's [Special Consideration page](#).

Please note that for **all** special consideration requests (including COVID-19-related requests), students will need documentary evidence to support absences from any classes or assessments.

Academic Honesty and Plagiarism

Academic integrity is fundamental to success at university. Academic integrity can be defined as a commitment to six fundamental values in academic pursuits: honesty, trust, fairness, respect, responsibility and courage (International Center for Academic Integrity, 'The Fundamental Values of Academic Integrity', T. Fishman (ed), Clemson University, 2013). At UNSW, this means that your work must be your own, and others' ideas should be appropriately acknowledged. If you don't follow these rules, plagiarism may be detected in your work.

Further information about academic integrity and plagiarism can be located at:

- The [Current Students site](#)
- The [ELISE training site](#)

The Conduct and Integrity Unit provides further resources to assist you to understand your conduct obligations as a student: <https://student.unsw.edu.au/conduct>.

To help describe what we are looking for, here are some things that we consider to be quite acceptable (even desirable!) actions for many assessments, and some that we consider to be unacceptable in most circumstances. Please check with the instructions for your assessments and your course coordinator if you're unsure. As a rule of thumb, if you don't think you could look the lecturer in the eye and say "this is my own work", then it's not acceptable.

Acceptable actions	Unacceptable actions
✓ reading/searching through material we have given you, including lecture slides, course notes, sample problems, workshop problem solutions	✗ asking for help with an assessment from other students, friends, family
✓ reading/searching lecture transcripts	✗ asking for help on Q&A or homework help websites
✓ reading/searching resources that we have pointed you to as part of this course, including textbooks, journal articles, websites	✗ searching for answers to the specific assessment questions online or in shared documents
✓ reading/searching through your own notes for this course	✗ copying material from any source into your answers
✓ all of the above, for any previous courses	✗ using generative AI tools to complete or substantially complete an assessment for you
✓ using spell checkers, grammar checkers etc to improve the quality of your writing	✗ paying someone else to do the assessment for you
✓ studying course material with other students	

Referencing is a way of acknowledging the sources of information that you use to research your assignments. You need to provide a reference whenever you draw on someone else's words, ideas or research. Not referencing other people's work can constitute plagiarism. Further information about referencing styles can be located at <https://student.unsw.edu.au/referencing>.

For assessments in the School of Chemical Engineering, we recommend the use of referencing software such as [Mendeley](#) or [EndNote](#) for managing references and citations. Unless required otherwise

specified (i.e. in the assignment instructions) students in the School of Chemical Engineering should use either the APA 7th edition, or the American Chemical Society (ACS) referencing style as canonical author-date and numbered styles respectively.

Artificial intelligence tools such as ChatGPT, CodePilot, and built-in tools within Word are modern tools that are useful in some circumstances. In your degree at UNSW, we're teaching you skills that are needed for your professional life, which will include how to use AI tools responsibly plus lots of things that AI tools cannot do for you. AI tools already are (or will soon be) part of professional practice for all of us. However, if we were only teaching you things that AI could do, your degree would be worthless, and you wouldn't have a job in 5 years.

Whether the use of AI tools in an assessment is appropriate will depend on the goals of that assessment. As ever, you should discuss this with your lecturers – there will certainly be assessments where the use of AI tools is encouraged, as well as others where it would interfere with your learning and place you at a disadvantage later. Our goal is to help you learn how to ethically and professionally use the tools available to you. To learn more about the use of AI, [see this discussion we have written](#) where we analyse the strengths and weaknesses of generative AI tools and discuss when it is professionally and ethically appropriate to use them.

While AI may provide useful tools to help with some assessments, UNSW's policy is quite clear that taking the output of generative AI and submitting it as your own work will never be appropriate, just as paying someone else to complete an assessment for you is serious misconduct.

Academic Information

To help you plan your degree, assistance is available from academic advisors in [The Nucleus](#) and also in the [School of Chemical Engineering](#).

Additional support for students

- [Current Student Gateway](#) for information about key dates, access to services, and lots more information
- [Engineering Student Life - Current Student Resources](#) for information about everything from getting to campus to our first year guide
- [Student Support and Success](#) for our UNSW team dedicated to helping with university life, visas, wellbeing, and academic performance
- [Academic Skills](#) to brush up on some study skills, time management skills, get one-on-one support in developing good learning habits, or join workshops on skills development
- [Student Wellbeing, Health and Safety](#) for information on the UNSW health services, mental health support, and lots of other useful wellbeing resources
- [Equitable Learning Services](#) for assistance with long term conditions that impact on your studies
- [IT Service Centre](#) for everything to do with computing, including installing UNSW licensed software, access to computing systems, on-campus WIFI and off-campus VPNs

Course workload

Course workload is calculated using the Units-Of-Credit (UOC). The normal workload expectation for one UOC is approximately 25 hours per term. This includes class contact hours, private study, other learning activities, preparation and time spent on all assessable work.

Most coursework courses at UNSW are 6 UOC and involve an estimated 150 hours to complete, for both regular and intensive terms. Each course includes a prescribed number of hours per week (h/w) of scheduled face-to-face and/or online contact. Any additional time beyond the prescribed contact hours should be spent in making sure that you understand the lecture material, completing the set assignments, further reading, and revising for any examinations. Most 6 UoC courses will involve approximately 10-12 hours per week of work on your part. If you're not sure what to do in these hours of independent study, the resources on the [UNSW Academic Skills](#) pages offer some suggestions including: making summaries of lectures, read/summarise sections from the textbook, attempt workshop problems, reattempting workshop problems with some hints from the solutions, looking for additional problems in the textbook.

Full-time enrolment at university means that it is a *full-time* occupation for you and so you would typically need to devote 35 hours per week to your studies to succeed. Full-time enrolment at university is definitely incompatible with full-time employment. Part-time/casual employment can certainly fit into your study schedule but you will have to carefully balance your study obligations with that work and decide how much time for leisure, family, and sleep you want left after fulfilling your commitments to study and work. Everyone only gets 168 hours per week; overloading yourself with both study commitments and work commitments leads to poor outcomes and dissatisfaction with both, overtiredness, mental health issues, and general poor quality of life.

On-campus class attendance

In 2023, most classes at UNSW are running in a face-to-face mode only. Attendance is expected as is

participation in the classes. As an evidence-driven engineer or scientist, you'll be interested to know that education research has shown students learn more effectively when they come to class, and less effectively from lecture catch-up recordings. If you have to miss a class due to illness, for example, we expect you to catch up in your time, and within the coming couple of days.

For most courses that are running in an "in person" mode:

- Lectures are normally recorded to provide an opportunity to review material after the lecture; lecture recordings are not a substitute for attending and engaging with the live class.
- Workshops/tutorials are not normally recorded as the activities that are run within those sessions normally cannot be captured by a recording. These activities may also include assessable activities in some or all weeks of the term.
- Laboratories are not recorded and require in-person attendance. Missing laboratory sessions may require you to do a make-up session later in the term; if you miss too many laboratory sessions, it may be necessary to seek a Permitted Withdrawal from the course and reattempt it next year, or end up with an Unsatisfactory Fail for the course.
- Assessments will often require in-person attendance in a timetabled class or a scheduled examination.

This course outline will have further details in the Course Schedule and Assessment sections.

Class numbers are capped in each class to ensure appropriate facilities are available, to maintain student:staff ratios, and to help maintain adequate ventilation in the spaces. Only students enrolled in each specific classes will be allowed in the room. Class rosters will be attached to corresponding rooms and circulated among lab demonstrators and tutors. No over-enrolment is allowed in face-to-face classes.

In certain classroom and laboratory situations where physical distancing cannot be maintained or the staff running the session believe that it will not be maintained, face masks will be designated by the course coordinator as **mandatory PPE** for students and staff. Students are required to bring and use their own face mask. Mask can be purchased from IGA Supermarket (Map B8, Lower Campus), campus pharmacy (Map F14, Middle Campus), the post office (Map F22, Upper Campus) and a vending machine in the foyer of the Biological Sciences Building (Map E26, Upper Campus).

Your health and the health of those in your class is critically important. You must stay at home if you have COVID-19 or have been advised to self-isolate by [NSW health](#) or government authorities.

Asking Questions

Asking questions is an important part of learning. Learning to ask good questions and building the confidence to do so in front of others is an important professional skill that you need to develop. The best place to ask questions is during the scheduled classes for this course, with the obvious exception being questions that are private in nature such as special consideration or equitable learning plans. Between classes, you might also think of questions — some of those you might save up for the next class (write them down!), and some of them you might ask in a Q&A channel on Teams or a Q&A forum on Moodle. Please understand that staff won't be able to answer questions on Teams/Moodle immediately but will endeavour to do so during their regular working hours (i.e. probably not at midnight!) and when they are next working on this particular course (i.e. it might be a day or two). Please respect that staff are juggling multiple work responsibilities (teaching more than one course, supervising research students, doing experiments, writing grants, ...) and also need to have balance between work and the rest of their life.

Note: This course outline sets out description of classes at the date the Course Outline is published. The nature of classes may change during the Term after the Course Outline is published. Moodle should be consulted for the up to date class descriptions. If there is any inconsistency in the description of activities between the University timetable and the Course Outline (as updated in Moodle), the description in the Course Outline/Moodle applies.

Image Credit

Pilot Hall with experiment rigs // UNSW Chemical Engineering

CRICOS

CRICOS Provider Code: 00098G

Acknowledgement of Country

We acknowledge the Bedegal people who are the traditional custodians of the lands on which UNSW Kensington campus is located.

Appendix: Engineers Australia (EA) Professional Engineer Competency Standard

Program Intended Learning Outcomes	
Knowledge and skill base	
PE1.1 Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline	✓
PE1.2 Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline	✓
PE1.3 In-depth understanding of specialist bodies of knowledge within the engineering discipline	✓
PE1.4 Discernment of knowledge development and research directions within the engineering discipline	✓
PE1.5 Knowledge of engineering design practice and contextual factors impacting the engineering discipline	✓
PE1.6 Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline	
Engineering application ability	
PE2.1 Application of established engineering methods to complex engineering problem solving	✓
PE2.2 Fluent application of engineering techniques, tools and resources	✓
PE2.3 Application of systematic engineering synthesis and design processes	✓
PE2.4 Application of systematic approaches to the conduct and management of engineering projects	✓
Professional and personal attributes	
PE3.1 Ethical conduct and professional accountability	✓
PE3.2 Effective oral and written communication in professional and lay domains	✓
PE3.3 Creative, innovative and pro-active demeanour	✓
PE3.4 Professional use and management of information	✓
PE3.5 Orderly management of self, and professional conduct	✓
PE3.6 Effective team membership and team leadership	