



## UNSW Course Outline

# MERE4953 Research Thesis C - 2024

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## General Course Information

**Course Code :** MERE4953

**Year :** 2024

**Term :** Term 2

**Teaching Period :** T2

**Is a multi-term course? :** No

**Faculty :** Faculty of Engineering

**Academic Unit :** School of Minerals & Energy Resources Engineering

**Delivery Mode :** Online

**Delivery Format :** Standard

**Delivery Location :** Kensington

**Campus :** Sydney

**Study Level :** Undergraduate

**Units of Credit :** 4

### Useful Links

[Handbook Class Timetable](#)

## Course Details & Outcomes

### Course Description

The thesis provides an opportunity for you to bring together engineering principles learned over your previous years of study and apply these principles to innovatively solve problems such as the development of a specific design, process and/or the investigation of a hypothesis. Thesis

projects are complex, open-ended problems that allow room for your creativity, and the acquisition, analysis and interpretation of results. There are multiple possible solutions or conclusions at the outset and sufficient complexity to require a degree of project planning. The thesis requires you to formulate problems in scientific or engineering terms, manage an technical project and find solutions by applying scientific and engineering methods. You will also develop their ability to work in a research and development environment. This is the third course of the 3 course thesis structure.

## Course Aims

The thesis provides students the opportunity to: 1) undertake and execute an academic research project, 2) innovatively solve problems by bringing together engineering principles learned over their previous years of study; 3) explain how their project fits within the discipline and broader context; 4) demonstrate research skills to autonomously work in a research and development environment. Thesis C complete any outstanding lab/field/modelling research and analyses, complete and submit the keystone deliverable research thesis, and present finds to academics and peers at a research seminar/video presentation.

# Course Learning Outcomes

| Course Learning Outcomes  |
|---|
| CLO1 : Develop a design or a process or investigate a hypothesis following industry and professional engineering standards. |
| CLO2 : Reflect critically on a specialist body of knowledge related to their thesis topic.                                  |
| CLO3 : Apply scientific and engineering methods to solve an engineering problem.  |
| CLO4 : Analyse data objectively using quantitative and mathematical methods.  |
| CLO5 : Demonstrate oral and written communication in professional and lay domains.  |

| Course Learning Outcomes  | Assessment Item  |
|---|--|
| CLO1 : Develop a design or a process or investigate a hypothesis following industry and professional engineering standards. | <ul style="list-style-type: none"><li>• Thesis B</li><li>• Thesis A</li><li>• Thesis C</li></ul> |
| CLO2 : Reflect critically on a specialist body of knowledge related to their thesis topic.                                  | <ul style="list-style-type: none"><li>• Thesis B</li><li>• Thesis A</li><li>• Thesis C</li></ul> |
| CLO3 : Apply scientific and engineering methods to solve an engineering problem.  | <ul style="list-style-type: none"><li>• Thesis B</li><li>• Thesis A</li><li>• Thesis C</li></ul> |
| CLO4 : Analyse data objectively using quantitative and mathematical methods.  | <ul style="list-style-type: none"><li>• Thesis B</li><li>• Thesis A</li><li>• Thesis C</li></ul> |
| CLO5 : Demonstrate oral and written communication in professional and lay domains.  | <ul style="list-style-type: none"><li>• Thesis B</li><li>• Thesis A</li><li>• Thesis C</li></ul> |

## Learning and Teaching Technologies

Moodle - Learning Management System

## Assessments

### Assessment Structure

| Assessment Item                           | Weight | Relevant Dates |
|---|--------|----------------|
| Thesis B<br>Assessment Format: Individual | 10%    |                |
| Thesis A<br>Assessment Format: Individual | 10%    |                |
| Thesis C<br>Assessment Format: Individual | 80%    |                |

# **Assessment Details**

## **Thesis B**

### Assessment Overview

Completed in Thesis B

### Course Learning Outcomes

- CLO1 : Develop a design or a process or investigate a hypothesis following industry and professional engineering standards.
- CLO2 : Reflect critically on a specialist body of knowledge related to their thesis topic.
- CLO3 : Apply scientific and engineering methods to solve an engineering problem.
- CLO4 : Analyse data objectively using quantitative and mathematical methods.
- CLO5 : Demonstrate oral and written communication in professional and lay domains.

## **Thesis A**

### Assessment Overview

Completed in Thesis A

### Course Learning Outcomes

- CLO1 : Develop a design or a process or investigate a hypothesis following industry and professional engineering standards.
- CLO2 : Reflect critically on a specialist body of knowledge related to their thesis topic.
- CLO3 : Apply scientific and engineering methods to solve an engineering problem.
- CLO4 : Analyse data objectively using quantitative and mathematical methods.
- CLO5 : Demonstrate oral and written communication in professional and lay domains.

## **Thesis C**

### Assessment Overview

Thesis: 60%

Participation: 5%

Presentation: 15%

### Course Learning Outcomes

- CLO1 : Develop a design or a process or investigate a hypothesis following industry and professional engineering standards.
- CLO2 : Reflect critically on a specialist body of knowledge related to their thesis topic.
- CLO3 : Apply scientific and engineering methods to solve an engineering problem.
- CLO4 : Analyse data objectively using quantitative and mathematical methods.
- CLO5 : Demonstrate oral and written communication in professional and lay domains.

# General Assessment Information

## Grading Basis

Standard

## Course Schedule

### Attendance Requirements

Students are strongly encouraged to attend all classes and review lecture recordings.

## Course Resources

### Prescribed Resources

Students are expected to:

- Read topic material provided by their supervisor
- Read materials provided by course coordinator, including rubrics, formatting guides and exemplars.
- Conduct research by creating a library of academic articles to draft their literature review.

The following resources will be helpful in searching for appropriate literature:

UNSW Library Featuring research help zone and many other services! <https://www.library.unsw.edu.au/study/services-and-facilities> Scopus Literature Advanced search features [scopus.com](http://scopus.com) Google Scholar Includes some pdfs [scholar.google.com.au](http://scholar.google.com.au)

### Recommended Resources

Students should consult the following:

- [Honours Thesis Writing for Engineering Students](#)
- [Online iWrite thesis writing tutorial](#)

References on writing style and technical communication skill:

- Lindsay, D "A Guide to Scientific Writing" 2nd ed. Longman, 1995
- Eisenberg, A "Effective Technical Communication" 2nd ed. McGraw-Hill, 1992.
- Evans, D. "How to write a better thesis or report" Melbourne University Press, 1995.
- Winkle, A and Hart, B "Report writing Style Guide for engineering students" 3rd ed. Faculty of Engineering, Flexible Learning Centre, University of South Australia, 1996.

Webpages for various societies have a number of resources and publications (including journal publications and textbooks) that might be helpful. For example, the following societies might be

relevant.

## Course Evaluation and Development

Feedback from students is welcomed, and is used to continuously improve the course outcomes and experiences for students.

## Staff Details

| Position | Name    | Email | Location | Phone | Availability | Equitable Learning Services Contact | Primary Contact |
|----------|---------|-------|----------|-------|--------------|-------------------------------------|-----------------|
|          | Yu Jing |       |          |       |              | No                                  | Yes             |

## Other Useful Information

### Academic Information

#### I. Special consideration and supplementary assessment

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, or within 3 working days of, submitting an assessment or sitting an exam.

Please note that UNSW has a Fit to Sit rule, which means that if you sit an exam, 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](#).

#### II. Administrative matters and links

All students are expected to read and be familiar with UNSW guidelines and policies. In particular, students should be familiar with the following:

- [Attendance](#)
- [UNSW Email Address](#)
- [Special Consideration](#)
- [Exams](#)
- [Approved Calculators](#)
- [Academic Honesty and Plagiarism](#)
- [Equitable Learning Services](#)

### **III. Equity and diversity**

Those students who have a disability that requires some adjustment in their teaching or learning environment are encouraged to discuss their study needs with the course convener prior to, or at the commencement of, their course, or with the Equity Officer (Disability) in the Equitable Learning Services. Issues to be discussed may include access to materials, signers or note-takers, the provision of services and additional exam and assessment arrangements. Early notification is essential to enable any necessary adjustments to be made.

### **IV. Professional Outcomes and Program Design**

Students are able to review the relevant professional outcomes and program designs for their streams by going to the following link: <https://www.unsw.edu.au/engineering/student-life/student-resources/program-design>.

*Note: This course outline sets out the 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 or your primary learning management system (LMS) 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/Moodle/LMS, the description in the Course Outline/Moodle/LMS applies.*

### **Academic Honesty and Plagiarism**

UNSW has an ongoing commitment to fostering a culture of learning informed by academic integrity. All UNSW students have a responsibility to adhere to this principle of academic integrity. Plagiarism undermines academic integrity and is not tolerated at UNSW. *Plagiarism at UNSW is defined as using the words or ideas of others and passing them off as your own.*

Plagiarism is a type of intellectual theft. It can take many forms, from deliberate cheating to accidentally copying from a source without acknowledgement. UNSW has produced a website with a wealth of resources to support students to understand and avoid plagiarism, visit: <student.unsw.edu.au/plagiarism>. The Learning Centre assists students with understanding academic integrity and how not to plagiarise. They also hold workshops and can help students one-on-one.

You are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient

time for research, drafting and the proper referencing of sources in preparing all assessment tasks.

Repeated plagiarism (even in first year), plagiarism after first year, or serious instances, may also be investigated under the Student Misconduct Procedures. The penalties under the procedures can include a reduction in marks, failing a course or for the most serious matters (like plagiarism in an honours thesis or contract cheating) even suspension from the university. The Student Misconduct Procedures are available here:

[www.gs.unsw.edu.au/policy/documents/studentmisconductprocedures.pdf](http://www.gs.unsw.edu.au/policy/documents/studentmisconductprocedures.pdf)

## **Submission of Assessment Tasks**

Work submitted late without an approved extension by the course coordinator or delegated authority is subject to a late penalty of five percent (5%) of the maximum mark possible for that assessment item, per calendar day.

The late penalty is applied per calendar day (including weekends and public holidays) that the assessment is overdue. There is no pro-rata of the late penalty for submissions made part way through a day. This is for all assessments where a penalty applies.

Work submitted after five days (120 hours) will not be accepted and a mark of zero will be awarded for that assessment item.

For some assessment items, a late penalty may not be appropriate. These will be clearly indicated in the course outline, and such assessments will receive a mark of zero if not completed by the specified date. Examples include:

- Weekly online tests or laboratory work worth a small proportion of the subject mark;
- Exams, peer feedback and team evaluation surveys;
- Online quizzes where answers are released to students on completion;
- Professional assessment tasks, where the intention is to create an authentic assessment that has an absolute submission date; and,
- Pass/Fail assessment tasks.

## **Faculty-specific Information**

[Engineering Student Support Services](#) – The Nucleus - enrolment, progression checks, clash requests, course issues or program-related queries

[Engineering Industrial Training](#) – Industrial training questions

[UNSW Study Abroad](#) – study abroad student enquiries (for inbound students)

[UNSW Exchange](#) – student exchange enquiries (for inbound students)

[UNSW Future Students](#) – potential student enquiries e.g. admissions, fees, programs, credit transfer

## **Phone**

(+61 2) 9385 8500 – Nucleus Student Hub

(+61 2) 9385 7661 – Engineering Industrial Training

(+61 2) 9385 3179 – UNSW Study Abroad and UNSW Exchange (for inbound students)

## **School-specific Information**

### **Course completion**

Course completion requires submission of all assessment items. Failure to submit all assessment items may result in the award of an Unsatisfactory Failure (UF) grade for the Course unless special consideration has been submitted and approved.

### **Submission of Assessment Tasks**

We encourage you to retain a copy of every assignment submitted for your own record, either in hardcopy or electronic form. All assessments must have an assessment cover sheet attached (if required).

### **Student Resources**

The School has [student resources](#) section, containing useful advice and information to ensure you're able to focus on your studies.

### **Computing Resources and Internet Access Requirements**

UNSW Minerals and Energy Resources Engineering provides blended learning using the online Moodle LMS (Learning Management System). Also see - Transitioning to Online

Learning: [www.covid19studyonline.unsw.edu.au](http://www.covid19studyonline.unsw.edu.au)

Note that some specialist engineering software is not available for Mac computers.

- Mining Engineering Students: OMB G48
- Petroleum Engineering Students: TETB LG34 & LG35

For more information about system requirements is available at [www.student.unsw.edu.au/moodle-system-requirements](http://www.student.unsw.edu.au/moodle-system-requirements)

## Accessing Course Materials Through Moodle

Course outlines, support materials are uploaded to Moodle, the university standard Learning Management System (LMS). In addition, on-line assignment submissions are made using the assignment dropbox facility provided in Moodle. All enrolled students are automatically included in Moodle for each course. To access these documents and other course resources, please visit: [www.moodle.telt.unsw.edu.au](http://www.moodle.telt.unsw.edu.au)

## School Contact Information

School of Minerals and Energy Resources Engineering  
Old Main Building, Level 1, 159 (K15)  
UNSW SYDNEY NSW 2052 AUSTRALIA

For current students, all enquiries and assistance relating to enrolment, class registration, progression checks and other administrative matters, please see [The Nucleus: Student Hub](#).

### Web & Important Links:

[School of Minerals and Energy Resources](#)

[The Nucleus Student Hub](#)

[Moodle](#)

[UNSW Handbook](#)

[UNSW Timetable](#)

[Student Wellbeing](#)

[Urgent Mental Health & Support](#)

[Equitable Learning Services](#)