



MMAN4010

Thesis A

Term Two // 2021

Course Overview

Staff Contact Details

Convenors

Name	Email	Availability	Location	Phone
Ang Liu	ang.liu@unsw.edu.au		J17-408	+61-2-93854080

Demonstrators

Name	Email	Availability	Location	Phone
Ali Ahmed	a.f.ahmed@unsw.edu.au			
Boming Zhang	boming.zhang@unsw.edu.au			
Yan Wang	yan.wang9@unsw.edu.au			
Muhammad Imran	muhammad.imran@unsw.edu.au			

School Contact Information

Location

UNSW Mechanical and Manufacturing Engineering

Ainsworth building J17, Level 1

Above Coffee on Campus

Hours

9:00–5:00pm, Monday–Friday*

*Closed on public holidays, School scheduled events and University Shutdown

Web

[School of Mechanical and Manufacturing Engineering](#)

[Engineering Student Support Services](#)

[Engineering Industrial Training](#)

[UNSW Study Abroad and Exchange](#) (for inbound students)

[UNSW Future Students](#)

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)

(+61 2) 9385 4097 – School Office**

**Please note that the School Office will not know when/if your course convenor is on campus or available

Email

[Engineering Student Support Services](#) – current student enquiries

- e.g. enrolment, progression, 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

[School Office](#) – School general office administration enquiries

- NB: the relevant teams listed above must be contacted for all student enquiries. The School will only be able to refer students on to the relevant team if contacted

Course Details

Credit Points 6

Summary of the Course

This course is the first of two parts and is undertaken before MMAN4020 Thesis B. The Thesis involves formulating the designs for and solutions to open-ended engineering problems. The problems will be drawn from contemporary practice and will be multi-disciplinary involving application of material learnt throughout the undergraduate program and will require creative thought. The course will include the preparation of relevant professional documents. Part A involves the formulation of a project proposal which includes a review of the relevant literature. The course will include the preparation of relevant professional documents. Part B involves the satisfactory preparation and submission an individual thesis addressing the project plan defined in Thesis A.

Students should have passed 132 units at the time they commence this course.

Course Aims

Course Aims

This course enhances the student's skills for undertaking scholarly enquiry by attempting to achieve a specific topic objective within a defined period of time. A significant component of the course relates to the review of literature, which promotes independent and reflective learning as well as increases students' capacity to develop information literacy. The thesis is expected to reinforce the student's ability and confidence in the written communication of technical information.

Course Learning Outcomes

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

Learning Outcome	EA Stage 1 Competencies
1. Conduct independent research and apply established theories to address an engineering problem that does not have a well-defined solution	PE2.3, PE2.4, PE3.1
2. Analyse critically, reflect on and synthesise complex information, problems, concepts and theories	PE1.3, PE1.4
3. Interpret and transmit knowledge, skills and ideas to specialist and no-specialist audiences	PE2.1, PE2.2
4. Demonstrate managerial skills and individual responsibility to complete a project within limited time and resources	PE3.2, PE3.4, PE3.5, PE3.6

Teaching Strategies

The Thesis is where each student works under the guidance of academic staff with input from technical (industry/research/practitioner) specialists. Topics are related to projects selected from contemporary practice. The work involves research-based investigations, industrial problems and design applications.

Assessment

Assessment Tasks

Assessment task	Weight	Due Date	Student Learning Outcomes Assessed
Progress Report	80%	13/08/2021 09:00 PM	1, 2, 3, 4
Presentation to supervisor	20%	06/08/2021 09:00 PM	4

Assessment Details

Assessment 1: Progress Report

Start date: Not Applicable

Length: 15 pages

Details:

1. A report is to be submitted to cover the project progress. The report should include components such as introduction, literature review, methodology, project management, conclusion, and so forth.
2. One report is to be submitted by each group.
3. The report has both group component and individual component. The group is composed of 6-7 students per group. 80% of the report will be marked individually.
4. Assessment criteria includes significance of research problem, novelty of research solution, comprehensiveness of literature review, structure of research strategy professionalism of report formatting, and so forth. Detailed marking rubrics will be posed on MS Teams.
5. The deadline for absolute fail is three days after the deadline.
6. The marks will be returned within two weeks after the deadline.

Submission notes: Via MS Teams

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

Assessment 2: Presentation to supervisor

Start date: Not Applicable

Details:

1. A presentation is to be made to the mentor and course convenor in terms of project progression.
2. One group presentation is to be made by each group.
3. The presentation is a group efforts. All group members will receive equal grades.
4. Assessment criteria includes significance of research problem, novelty of research solution, comprehensiveness of literature review, structure of research strategy professionalism, and so forth. Detailed marking rubrics will be posed on MS Teams.

5. The deadline for absolute fail is one day after the deadline.
6. The marks will be returned within two weeks after the deadline.

Submission notes: Via MS Teams

Turnitin setting: This is not a Turnitin assignment

Attendance Requirements

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

Course Schedule

[View class timetable](#)

Timetable

Date	Type	Content
0 Week: 25 May - 28 May	Online Activity	<ul style="list-style-type: none"> • Read the course outline and project brief carefully • Introduce yourself to the whole class using the moodle pinwall • Sign up Microsoft Teams and familiarise with Teams functions
Week 1: 31 May - 4 June	Lecture	<ul style="list-style-type: none"> • Meet your course convenor and Mentors on Teams • Find a group and project
	Group Activity	<ul style="list-style-type: none"> • Post an individual introduction of yourself on your Team Channel. The introduction shall outline your engineering skillset, mindset, and interests. • Organize a group meeting on MS Teams or in person.
	Tutorial	Meet your mentor on a weekly basis to report project progress and receive mentorship during the allocated tutorial hours.
Week 2: 7 June - 11 June	Group Work	<p>Have a group meeting to discuss the division of responsibilities along two dimensions: teamwork and taskwork</p> <ul style="list-style-type: none"> • In terms of teamwork, a specific role/title is to be assigned for each group member. Certain roles may be shared or rotated among multiple members. • In terms of taskwork, the project should be decomposed into multiple portfolios that can be completed by individual students independently. Certain portfolios (e.g., CAD or simulation) may be shared by 2-3 students. <p>https://student.unsw.edu.au/groupwork</p> <ul style="list-style-type: none"> • The workload should be distributed equitably. • Post the meeting minutes on your group channel in MS Teams.

	Tutorial	<p>Have a group meeting with your Mentor to discuss:</p> <ul style="list-style-type: none"> • Your group's interpretation of the Project Brief • Your group's proposed strategy and methodology • Keywords for the literature research to examine existing knowledge <p>Have a meeting with the Course Convener to report project progress</p> <p>The meeting time is to be scheduled with each Group separately. It is unnecessarily the tutorial day/time in the timetable.</p>
Week 3: 14 June - 18 June	Group Work	<p>Have a group meeting to finalize the division of responsibilities as well as the report structure.</p> <ul style="list-style-type: none"> • Post a tentative structure of the preliminary report on Teams. • Post a "project contract" signed by all group members on Teams. The contract should clearly specify every member's commitment to different roles and portfolios. • Post a project task timeline (Gantt Chart) on Teams. <p>Post the meeting minutes on your group channel in MS Teams.</p> <p>Each group member should begin strategizing and conceptualizing his/her individual portfolio.</p>
	Tutorial	<p>Have a group meeting with your Mentor to report project progress on a weekly basis.</p> <p>Have a group meeting with the Course Convener to report project progress on a fortnightly basis.</p> <p>The meeting time is to be scheduled with each Group separately. It is unnecessarily the tutorial day/time in the timetable.</p>
Week 4: 21 June - 25 June	Group Activity	<p>Have a group meeting to discuss every member's interpretation of his/her portfolio</p> <ul style="list-style-type: none"> • State of available literature • Technical challenges and how you are addressing them in your portfolio. Disciplinary skills to be employed such as CAD, MATLAB, simulation, etc. as relevant to the Project Brief • Resources required to complete the

		<p>individual portfolio and the project, if applicable</p> <ul style="list-style-type: none"> • Any issue with group members' performance: attendance, communication, effort, etc. <p>Post the meeting minutes on your group channel in MS Teams.</p>
	Tutorial	Have a group meeting with your Mentor to report project progress on a weekly basis during tutorial times.
Week 5: 28 June - 2 July	Group Work	<p>Have a group meeting to discuss every member's progress of individual portfolios.</p> <p>Post the meeting minutes on your group channel in MS Teams.</p>
	Tutorial	Have a group meeting with your Mentor to report project progress on a weekly basis.
Week 6: 5 July - 9 July	Project	This is the flexible week, hence no meetings with the mentor or course convener. It is up to each Group to decide how to use this week to benefit the project.
Week 7: 12 July - 16 July	Group Work	<p>Have a group meeting to discuss as follows:</p> <ul style="list-style-type: none"> • Every member's progress of individual portfolios. • The group component of the project report. • The format, content, and responsibilities of the project presentation. <p>Post the meeting minutes on your group channel in MS Teams.</p>
	Tutorial	Have a group meeting with your Mentor to report project progress on a weekly basis.
Week 8: 19 July - 23 July	Group Work	<p>Have a group meeting to discuss as follows:</p> <ul style="list-style-type: none"> • Every member's progress of individual portfolios. • The group component of the project report. • The format, content, and responsibilities of the project presentation.

		<p>Post the meeting minutes on your group channel in MS Teams.</p> <p>Post a draft report on MS Teams. This draft report will not be graded. It is intended to serve as a checkpoint of internal progress.</p>
	Tutorial	Have a group meeting with your Mentor to report project progress on a weekly basis.
Week 9: 26 July - 30 July	Group Work	<p>Have a group meeting to do as follows:</p> <ul style="list-style-type: none"> • Review every member's progress of individual portfolios. • Finalize the group component of the project report. • Finalize and practice the group presentation. <p>Post the meeting minutes on your group channel in MS Teams.</p>
	Tutorial	Have a group meeting with your Mentor to report project progress on a weekly basis.
Week 10: 2 August - 6 August	Assessment	<p>The project presentation is due by Friday in Week 9</p> <p>The project report is due on Friday in Week 10.</p>
	Tutorial	View others presentations and do final improvements to your report.

Resources

Recommended Resources

- a. UNSW Library website: <https://www.library.unsw.edu.au/>
- b. Moodle: <https://moodle.telt.unsw.edu.au/login/index.php>

Course Evaluation and Development

Feedback on the course is gathered periodically using various means, including the UNSW myExperience process, informal discussion in the final class for the course, and the School's Student/Staff meetings. Your feedback is taken seriously, and continual improvements are made to the course based, in part, on such feedback.

In this course, recent improvements resulting from student feedback include: group formation within tutorial session, grading procedure and mechanism, documentation of special arrangement between each group with the teaching team,

Submission of Assessment Tasks

Assessment submission and marking criteria

Should the course have any non-electronic assessment submission, these should have a standard School cover sheet.

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 due respect. Presenting results clearly gives the marker the best chance of understanding your method; even if the numerical results are incorrect.

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 policy

Work submitted late without an approved extension by the course coordinator or delegated authority is subject to a late penalty of 20 percent (20%) 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.

Work submitted after the 'deadline for absolute fail' is not 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 are clearly indicated in the course outline, and such assessments receive a mark of zero if not completed by the specified date. Examples include:

1. Weekly online tests or laboratory work worth a small proportion of the subject mark, or
2. Online quizzes where answers are released to students on completion, or
3. Professional assessment tasks, where the intention is to create an authentic assessment that has an absolute submission date, or
4. Pass/Fail assessment tasks.

Examinations

You must be available for all quizzes, tests and examinations. For courses that have final examinations, these are held during the University examination periods: February for Summer Term, May for T1, August for T2, and November/December for T3.

Please visit myUNSW for Provisional Examination timetable publish dates. For further information on exams, please see the [Exams](#) webpage.

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 now 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 students will **not** be required to provide **any** documentary evidence to support absences from any classes missed **because of COVID-19 public health measures such as isolation**. UNSW will **not** be insisting on medical certificates from anyone deemed to be a positive case, or when they have recovered. Such certificates are difficult to obtain and put an unnecessary strain on students and medical staff.

Applications for special consideration **will** be required for assessment and participation absences – but no documentary evidence **for COVID 19 illness or isolation** will be required.

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.

If plagiarism is found in your work when you are in first year, your lecturer will offer you assistance to improve your academic skills. They may ask you to look at some online resources, attend the Learning Centre, or sometimes resubmit your work with the problem fixed. However more serious instances in first year, such as stealing another student's work or paying someone to do your work, may be investigated under the Student Misconduct Procedures.

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) even suspension from the university. The Student Misconduct Procedures are available here:

www.gs.unsw.edu.au/policy/documents/studentmisconductprocedures.pdf

Academic Information

Credit points

Course credit is calculated in 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.

On-campus class attendance

Public distancing conditions must be followed for all face-to-face classes. To ensure this, only students enrolled in those classes will be allowed in the room. No over-enrolment is allowed in face-to-face classes. Students enrolled in online classes can swap their enrolment from online to a **limited** number of on-campus classes by Sunday, Week 1. Please refer to your course's Microsoft Teams and Moodle sites for more information about class attendance for in-person and online class sections/activities.

Your health and the health of those in your class is critically important. You must stay at home if you are sick or have been advised to self-isolate by [NSW health](#) or government authorities. Current alerts and a list of hotspots can be found [here](#). **You will not be penalised for missing a face-to-face activity due to illness or a requirement to self-isolate.** We will work with you to ensure continuity of learning during your isolation and have plans in place for you to catch up on any content or learning activities you may miss. Where this might not be possible, an application for fee remission may be discussed. Further information is available on any course Moodle or Teams site.

In certain classroom and laboratory situations where physical distancing cannot be maintained or there is a high risk that it cannot be maintained, face masks will be considered **mandatory PPE** for students and staff.

For more information, please refer to the FAQs: <https://www.covid-19.unsw.edu.au/safe-return-campus-faqs>

Guidelines

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](#)

Important Links

- [Moodle](#)
- [Lab Access](#)
- [Computing Facilities](#)
- [Student Resources](#)
- [Course Outlines](#)
- [Faculty Transitional Arrangements for COVID-19](#)
- [Makerspace](#)
- [UNSW Timetable](#)
- [UNSW Handbook](#)
- [Equitable Learning Services](#)

Image Credit

Synergies in Sound 2016

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	✓