



# MMAN4010

Thesis A

Term Three // 2020

## Course Overview

### Staff Contact Details

#### Convenors

Name	Email	Availability	Location	Phone
Ang Liu	ang.liu@unsw.edu.au	By appointment	408C - Ainsworth Building	293854080

#### Demonstrators

Name	Email	Availability	Location	Phone
Ali Ahmed	a.f.ahmed@unsw.edu.au	By appointment		
Henry Liu	h.liu@unsw.edu.au	By appointment		

### 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

## Course Details

### Credit Points 6

### Summary of the Course

Thesis (Practice) allows each student to work under the guidance of the course convenor and Mentors. The nominated Project involves research-based investigations, industrial problem-solving and engineering design, with virtual simulation/prototyping/proof-of-concept (as applicable).

This course is the first of two parts and is undertaken before MMAN4020 Thesis B (Practice) next term. **They are two parts of a whole.** The project involves formulating the design for, and a viable solution to, the Project Brief provided. The problem is multi-disciplinary, involving the application of material learnt throughout your undergraduate program and will require a lot of creative thought. Part A includes the formulation of a report, which includes a review of the relevant literature and other professional engineering documents.

**The group project is to be completed in two consecutive trimesters** during the last academic year before graduation. Do not enrol in Practice Thesis A if you cannot do Practice Thesis B in the following term. It is not the responsibility of the course coordinator or Mentors to instruct the student what to do in this thesis Course, nor should it be assumed that your Mentor is an expert in all areas of engineering. Your Mentor is there to offer guidance and advice, as may other staff in the School if agreeable and available (you should always seek an appointment by prior arrangement), who may have expertise in the area of your project. The successful execution of the project is solely the responsibility of the student.

### Course Aims

This course enhances the student's skills for undertaking scholarly and professional enquiry by attempting to achieve a specific project 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 report is expected to reinforce the student's ability and confidence in the written communication of technical information. Verbal presentation skills are tested during the video Presentation and during group/Mentor Teams online meetings.

### Course Learning Outcomes

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

Learning Outcome	EA Stage 1 Competencies
1. You will be able to plan a major engineering project.	PE2.1, PE2.3, PE2.4, PE3.3
2. You will learn how to collect and synthesise relevant information for the project.	PE2.1, PE2.3, PE2.4
3. You will learn to communicate professionally with others involved in the project, such as your supervisors and mentors.	PE2.4, PE3.2, PE3.4
4. You'll be able to produce a detailed, professional-standard technical document describing your work and outcomes and the	PE3.4, PE3.5, PE3.6

Learning Outcome	EA Stage 1 Competencies
"why" as much as the "what".	

## 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
Project Presentation	20%	20/11/2020 09:00 PM	1, 2, 3, 4
Project Report	80%	27/11/2020 09:00 PM	1, 2, 3, 4

### Assessment Details

#### Assessment 1: Project Presentation

**Start date:** Not Applicable

**Length:** 20-25 minutes

**Details:**

Group presentation to the course convener and mentors on project progress and achievement.

**Additional details:**

Detailed presentation guidance and rubric will be posed on MS Teams in due time.

**Turnitin setting:** This is not a Turnitin assignment

#### Assessment 2: Project Report

**Start date:** Not Applicable

**Details:**

Every group will submit a project report, including collaborative group work as well as a collection of individual portfolios authored independently by each group member.

**Additional details:**

Detailed assessment guideline and marking rubric will be posed on MS Teams in due time.

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

## 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: 8 September - 9 September	Online Activity	<ul style="list-style-type: none"> <li>• Read the course outline and project brief carefully</li> <li>• Sign up Microsoft Teams and familiarize with Teams functions</li> <li>• Fill out the online survey on group formation</li> </ul>
Week 1: 14 September - 18 September	Lecture	<ul style="list-style-type: none"> <li>• Meet your course convenor and Mentors on Teams.</li> <li>• Be allocated into a project Group.</li> </ul>
	Group Activity	<ul style="list-style-type: none"> <li>• Post an individual introduction of yourself on your Team Channel. The introduction shall outline your engineering skillset, mindset, and interests.</li> <li>• Organize a group meeting on MS Teams or in person.</li> </ul>
	Tutorial	<p>Meet your mentor on a weekly basis to report project progress and receive mentorship.</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 2: 21 September - 25 September	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"> <li>• 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.</li> <li>• 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.</li> </ul> <p><a href="https://student.unsw.edu.au/groupwork">https://student.unsw.edu.au/groupwork</a></p> <ul style="list-style-type: none"> <li>• The workload should be distributed equitably.</li> <li>• Post the meeting minutes on your group</li> </ul>

		channel in MS Teams.
	Tutorial	<p>Have a group meeting with your Mentor to discuss:</p> <ul style="list-style-type: none"> <li>• Your group’s interpretation of the Project Brief</li> <li>• Your group’s proposed strategy and methodology</li> <li>• Keywords for the literature research to examine existing knowledge</li> </ul> <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: 28 September - 2 October	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"> <li>• Post a tentative structure of the preliminary report on Teams.</li> <li>• 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.</li> <li>• Post a project task timeline (Gantt Chart) on Teams.</li> </ul> <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: 5 October - 9 October	Group Activity	<p>Have a group meeting to discuss every member’s interpretation of his/her portfolio</p> <ul style="list-style-type: none"> <li>• State of available literature</li> <li>• Technical challenges and how you are addressing them in your portfolio.</li> </ul> <p>Disciplinary skills to be employed such as CAD, MATLAB, simulation, etc. as relevant</p>



		<p>to the Project Brief</p> <ul style="list-style-type: none"> <li>• Resources required to complete the individual portfolio and the project, if applicable</li> <li>• Any issue with group members' performance: attendance, communication, effort, etc.</li> </ul> <p>Post the meeting minutes on your group channel in MS Teams.</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 5: 12 October - 16 October	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	<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 6: 19 October - 23 October	Project	<p>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.</p>
Week 7: 26 October - 30 October	Group Work	<p>Have a group meeting to discuss as follows:</p> <ul style="list-style-type: none"> <li>• Every member's progress of individual portfolios.</li> <li>• The group component of the project report.</li> <li>• The format, content, and responsibilities of the project presentation.</li> </ul> <p>Post the meeting minutes on your group channel in MS Teams.</p>
	Tutorial	<p>Have a group meeting with your Mentor to report</p>

		<p>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 8: 2 November - 6 November	Group Work	<p>Have a group meeting to discuss as follows:</p> <ul style="list-style-type: none"> <li>• Every member's progress of individual portfolios.</li> <li>• The group component of the project report.</li> <li>• The format, content, and responsibilities of the project presentation.</li> </ul> <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	<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 9: 9 November - 13 November	Group Work	<p>Have a group meeting to do as follows:</p> <ul style="list-style-type: none"> <li>• Review every member's progress of individual portfolios.</li> <li>• Finalize the group component of the project report.</li> <li>• Finalize and practice the group presentation.</li> </ul> <p>Post the meeting minutes on your group channel in MS Teams.</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</p>

		day/time in the timetable.
Week 10: 16 November - 20 November	Assessment	The project presentation is due by Friday in Week 10  The project report is due on Friday in Week 11.
	Tutorial	Have a group meeting with your Mentor and the Course Convener if so desired.  The meeting time is to be scheduled with each Group separately. It is unnecessarily the tutorial day/time in the timetable.

## Resources

### Prescribed Resources

Content on the course Moodle page and Teams will be updated often with tips, discussions and resources, so you are strongly advised to make sure you check for all updates.

UNSW Library website: <https://www.library.unsw.edu.au/>

Moodle: <https://moodle.telt.unsw.edu.au/login/index.php>

### Recommended Resources

Not available

### 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.

Migration to an online Teams environment has been instigated for T3-2020.

# 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 in T3.

## 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](http://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](http://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. 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 T3 face-to-face classes. To ensure this, only students enrolled in those classes will be allowed in the room. Class rosters will be attached to corresponding rooms and circulated among lab demonstrators. No over-enrolment is allowed in face-to-face class. Students enrolled in online classes can swap their enrolment from online to other additional, **but 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 1.5 metres 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](#)
- [Health and Safety](#)
- [Computing Facilities](#)
- [Student Resources](#)
- [Course Outlines](#)
- [Engineering Student Support Services Centre](#)
- [Makerspace](#)
- [UNSW Timetable](#)
- [UNSW Handbook](#)
- [UNSW Mechanical and Manufacturing Engineering](#)
- [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

<b>Program Intended Learning Outcomes</b>	
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	✓