



UNSW Course Outline

MMAN4020 Thesis B - 2024

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General Course Information

Course Code : MMAN4020

Year : 2024

Term : Term 1

Teaching Period : T1

Is a multi-term course? : No

Faculty : Faculty of Engineering

Academic Unit : School of Mechanical and Manufacturing Engineering

Delivery Mode : Multimodal

Delivery Format : Standard

Delivery Location : Kensington

Campus : Sydney

Study Level : Undergraduate

Units of Credit : 6

Useful Links

[Handbook Class Timetable](#)

Course Details & Outcomes

Course Description

Thesis (Practice), known colloquially as Team Thesis, is the final undergraduate course (or Master's course) in the engineering program. This course allows each student to work under the guidance of the course convenor and mentors. The nominated project involves industrial problem-solving and engineering design, with elements of analysis, simulation, proof-of-concept

and/or prototyping.

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 knowledge, which promotes independent and reflective learning as well as increases the student's 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 meetings (in-person or online).

This course is the second of two parts and is undertaken immediately after MMAN4010/MMAN9001 Thesis A. **They are two parts of a whole and must be completed in two consecutive trimesters. Note that in the event of a Fail grade being received in either Thesis A or Thesis B, to pass the course you will have to enrol again in Thesis A and undertake a new project.**

In the course you will be expected to apply the knowledge and skills you acquired in the preceding courses/degree to a real and current engineering problem. To facilitate this, you will be working on a team project specified by one of UNSW's **Industry Partners**. Part A involves the formulation of a project scope which includes a review of the knowledge base, engineering role assignment, risk assessment and budgeting. This course, Part B, involves the satisfactory preparation and submission of a group thesis addressing the project plan defined in Thesis A.

The group project is to be completed in two consecutive trimesters. It is not the responsibility of the course coordinator or mentors to provide the student with step-by-step instructions on what to do in this course, and 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 who have expertise in your project area and may be available to assist (you should always seek an appointment by prior arrangement). The successful execution of the project is solely the responsibility of the student.

Course Aims

The course builds directly on MMAN4010/MMAN9001 Thesis A and involves the implementation of the extensive project plan developed in that course. The demonstration of teamwork and collaborative skills – as well as meeting specified deliverables – is essential for satisfactory completion. Interaction with the clients – both in formal meetings and in your regular liaison throughout the term – as well as the quality of your reporting of these events is expected to be at the standards of professional consulting engineers.

After having developed a project plan in Thesis A, in this course your group will engage in activities and negotiated learning with experts from both within and outside the university to deliver a solution to your client's problem. Essentially, by the end of term your team should have:

- Completed a solution to your client's problem with a high degree of engineering rigour. This may take the form of a completed design, a functioning prototype, a newly developed algorithm or coding solution, or a combination of the above.
- Completed a comprehensive report outlining your solution to your client, as well as an accompanying presentation to explain your methods and to justify the decisions taken in arriving at your proposed solution.

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Conduct independent and group research and apply established theories to address an engineering problem that does not have a well-defined solution
CLO2 : Apply an effective problem-solving approach that is deliverable in practice and justify and defend the selection.
CLO3 : Execute effective oral and written presentations to technical audiences.
CLO4 : Demonstrate managerial skills and individual responsibility to complete a project within limited time and resources.

Course Learning Outcomes	Assessment Item
CLO1 : Conduct independent and group research and apply established theories to address an engineering problem that does not have a well-defined solution	<ul style="list-style-type: none"> • Final Report • Final Presentation
CLO2 : Apply an effective problem-solving approach that is deliverable in practice and justify and defend the selection.	<ul style="list-style-type: none"> • Final Report • Final Presentation
CLO3 : Execute effective oral and written presentations to technical audiences.	<ul style="list-style-type: none"> • Final Report • Final Presentation
CLO4 : Demonstrate managerial skills and individual responsibility to complete a project within limited time and resources.	<ul style="list-style-type: none"> • Final Report • Final Presentation

Learning and Teaching Technologies

Moodle - Learning Management System | Microsoft Teams

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Final Report Assessment Format: Group	80%	Start Date: Not Applicable Due Date: Not Applicable
Final Presentation Assessment Format: Group	20%	Start Date: Not Applicable Due Date: Not Applicable

Assessment Details

Final Report

Assessment Overview

Assessment consists of the following parts:

Final Report (75%): Final report including an understanding of the industry client's problem, review of knowledge base, justification of solution methodology, review of alternative approaches, and explanation of the chosen solution. Group task.

Team Evaluation (5%): Evaluation of performance of team members (format to be advised). Individual task. No late Team Evaluations accepted.

Note that although most assessment tasks are group activities, your marks are individualised based on your contribution to the project.

Course Learning Outcomes

- CL01 : Conduct independent and group research and apply established theories to address an engineering problem that does not have a well-defined solution
- CL02 : Apply an effective problem-solving approach that is deliverable in practice and justify and defend the selection.
- CL03 : Execute effective oral and written presentations to technical audiences.
- CL04 : Demonstrate managerial skills and individual responsibility to complete a project within limited time and resources.

Detailed Assessment Description

Final Report

Assessment length: 40 Pages + Appendices

Submission notes: Via MS Teams

Due date: 11:59 pm Friday, Week 10 (Sydney time)

Deadline for absolute fail: 5 days after due date

Marks returned: On release of final results

Assessment criteria: Released with assignment

Team Evaluation

Assessment length: N/A

Submission notes: TBC

Due date: 11:59 pm Friday, Week 10 (Sydney time)

Deadline for absolute fail: N/A (no late submissions accepted)

Marks returned: On release of final results

Assessment criteria: Released with assignment

Assessment information

Marking rubric for Report to be provided at start of term.

Assignment submission Turnitin type

Not Applicable

Final Presentation

Assessment Overview

Final presentation to the industry client, mentor and peers. 15 minute presentation followed by Q&A session to obtain feedback from the client, mentor and course co-ordinator.

Course Learning Outcomes

- CL01 : Conduct independent and group research and apply established theories to address an engineering problem that does not have a well-defined solution
- CL02 : Apply an effective problem-solving approach that is deliverable in practice and justify and defend the selection.
- CL03 : Execute effective oral and written presentations to technical audiences.
- CL04 : Demonstrate managerial skills and individual responsibility to complete a project within limited time and resources.

Detailed Assessment Description

Assessment length: 15 minutes + 5 minutes Q&A

Submission notes: Format TBC

Due date: TBC, Week 11

Deadline for absolute fail: N/A

Marks returned: On release of final results

Assessment criteria: Released with assignment

Assessment information

Marking rubric to be provided at start of term.

Assignment submission Turnitin type

Not Applicable

General Assessment Information

Note that most assessments in this course will be done within your allocated group (usually 5-10 students), unless specified otherwise.

Grading Basis

Standard

Course Schedule

Attendance Requirements

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

General Schedule Information

No fixed schedule is provided for this course. It is up to individual groups to discuss and arrange scheduling matters amongst themselves, in consultation with their mentor and industry client, as appropriate. Note that in Week 1 there will be a brief introductory lecture, but no lectures in the remaining weeks. In general, we recommend that every week you: meet with your group and mentor, discuss every member's progress on their individual portfolios, and post the meeting minutes on your group channel in MS Teams.

Course Resources

Prescribed Resources

All Course content will be shared through Teams, which will be updated regularly. You are strongly advised to make sure you check for all updates.

Recommended Resources

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

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: grading procedure and mechanism, provision of more frequent feedback on weekly assessments, and a revised team evaluation procedure.

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Convenor	Wade Smith		Ainsworth Building (J17) Level 4, Room 408A		This is a Microsoft Teams-based online Course: message me in Chat or via Post in your Group's Teams Channel. Video calls are also to be arranged this way by appointment only.	No	Yes
Demonstrator	Alexander Bateman				This is a Microsoft Teams-based online Course: message me in Chat or via Post in your Group's Teams Channel. Video calls are also to be arranged this way by appointment only.	No	No

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

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

Short Extensions

Short extensions are not currently applicable to Mechanical and Manufacturing Engineering Courses.

Review of Results

The purpose of a review of results is if there was a marking error. Review of results is for when you have cause to believe that there is a marking error. Review of Results cannot be used to get feedback. If you would like feedback for assessments prior to the final exam, you are welcome to contact the course convenor directly. No feedback will be provided on final exams.

Use of AI

The use of AI is prohibited unless explicitly permitted by the course convenor. Please respect this and be aware that penalties will apply when unauthorised use is detected, such as through Turnitin. If the use of generative AI, such as ChatGPT, is allowed in a specific assessment, they must be properly credited, and your submissions must be substantially your own work.

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

Important Links

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