



MMAN3000

Professional Engineering and Communication

Term Two // 2021

Course Overview

Staff Contact Details

Convenors

Name	Email	Availability	Location	Phone
Nicholas Gilmore	designnext@unsw.edu.au	Consultations available during usual business hours upon request	Room 503, Level 5, Ainsworth Building J17	Microsoft Teams
Imrana Kabir	i.kabir@unsw.edu.au	Consultations available during usual business hours upon request	Room 505, Level 5, Ainsworth Building J17	Microsoft Teams
Doménique van Gennip	designnext@unsw.edu.au	Consultations available during usual business hours upon request	Room 503, Level 5, Ainsworth Building J17	Microsoft Teams

Demonstrators

Name	Email	Availability	Location	Phone
Dylan Sanusi-Goh	d.sanusi-goh@unsw.edu.au	During demonstration hours	NA	Microsoft Teams
Leigh Huang	leigh.huang@unsw.edu.au	During demonstration hours	NA	Microsoft Teams
Ian Mui	i.mui@unsw.edu.au	During demonstration hours	NA	Microsoft Teams
Anita Cheah	anita.cheah@unsw.edu.au	During demonstration hours	NA	Microsoft Teams
Thomas Wright	thomas.wright@unsw.edu.au	During demonstration hours	NA	Microsoft Teams
Lauren Wood	lauren.wood1@unsw.edu.au	During demonstration hours	NA	Microsoft Teams
Rachael Sharp	z5113875@unsw.edu.au	During demonstration hours	NA	Microsoft Teams
Oliver Loewenthal	z5162960@unsw.edu.au	During demonstration hours	NA	Microsoft Teams
Eliza Falkenmire	z5209572@unsw.edu.au	During demonstration hours	NA	Microsoft Teams

Name	Email	Availability	Location	Phone
Ryan Fitzpatrick	ryan.fitzpatrick@unsw.edu.au	During demonstration hours	NA	Microsoft Teams

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

Professional Engineering and Communication (MMAN3000) aims to prepare students for a career as a professional engineer.

The centerpiece of the course is a group project, where students prepare an engineering *Business Plan*. Two preliminary presentation tasks allow students to build up to this major task throughout the term. The business plan development is supported through a series of guest lectures from esteemed industry professionals. These experts provide insights on engineering practice, pulling on decades of experience to guide students on topics such as decision making in leadership, and navigating ethical dilemmas. Teams will also be mentored by demonstrators during weekly meetings. Meetings will include unstructured project working sessions, and structured activities such as presentation pressure cookers, lean canvas modelling and diversity exercises.

In this course, students apply technical engineering skills. However, the course focuses on developing non-technical skills which are currently sought after in the employment market. Broadly, these non-technical topics fall under professional conduct. Specifically, the topics include communication, ethical thinking, teamwork, planning, management and research. Students are likely familiar with the challenge of technical analysis. However, this challenge is often increased by non-technical considerations which arise in an organisation's commercial and social context.

The course also prepares students for starting their final year and joining the workforce, through practical lectures on thesis research, industrial training, writing resumes and cover letter, networking, negotiating and electronic communication.

Course Aims

This course aims to prepare students for a career as a professional engineer.

1. Expose students to a range of solutions used by professional engineers, such as decision making, project management and ethical conduct.
2. Develop students' ability to work effectively as part of a team through activities such as designing a solution to an open-ended project and considering personal biases within a team.
3. Develop students' oral communication skills through presenting complex engineering concepts in a commercially compelling and engaging manner.
4. Improve students' writing skills through activities such as the development of a business plan and ethics report.

Course Learning Outcomes

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

Learning Outcome	EA Stage 1 Competencies
1. Ability to develop and apply planning strategies and utilise basic project management approaches for large and small tasks.	PE2.3, PE2.4, PE3.4, PE3.5, PE3.6

Learning Outcome	EA Stage 1 Competencies
2. Understanding of the importance and relevance of ethical and moral considerations in professional engineering life and the ability to apply reasoned decision making processes to resolve ethical dilemmas and potential conflicts of interest.	PE1.6, PE3.1, PE3.4, PE3.5, PE1.5
3. Understanding of the psychology and dynamics of team projects and interpersonal interactions, and an ability to demonstrate effective teamworking strategies based on this.	PE2.4, PE3.1, PE3.2, PE3.3, PE3.4, PE3.5, PE3.6
4. Development and application of high-level research skills suitable for academic and industrial environments.	PE1.4, PE1.5, PE1.6, PE3.1, PE3.3, PE3.4, PE2.1, PE2.2, PE2.3, PE2.4
5. Improved confidence and skills in oral communication.	PE3.2, PE3.4, PE3.5, PE3.6
6. Ability to write various technical documents to a high professional standard.	PE3.2, PE3.4, PE3.5, PE3.6, PE2.3, PE2.4

Teaching Strategies

A detailed schedule of class activities and assessments is provided later in the document. A brief overview is provided here.

Each week students will attend two 2-hour lectures. These lectures are chaired by course convenors and include over a dozen guest lecturers from within and outside UNSW. These lectures aim to support students development as professional engineers, and also the completion of assessment tasks. Lectures are delivered online and will be recorded. However, live attendance is encouraged to facilitate engagement with the lecturer.

Each week students will attend a single 2-hour workshop. During the first half of the term, these will consist of structured activities. While in the second half of the term, these sessions will be dedicated to working on business plans. These workshops will either be delivered online or on-campus depending on your enrollment.

There are four assessment tasks. Early in the term, individual students will submit a short business proposal presentation video. These submissions will be used to form teams within each workshop class. Later in the term student groups will then submit a business pitch video. This will provide a feedback milestone before student groups submit their business plan at the end of term. Individual students will also submit an ethics report during the middle of the term, where they explore an engineering ethical dilemma. All group submissions will include a team evaluation survey, where students may assess the relative contribution of their teammates. The results of these surveys will be used to scale marks accordingly.

Full participation in these classes is expected. Therefore, you are held accountable for all content and instructions which are provided in these classes.

Additional Course Information

Each week, students are expected to meet independently with their team. Arranging these regular meeting should be one of your first actions after teams are formed.

The normal workload expectations of a student are approximately 25 hours per term for each UOC, including class contact hours, other learning activities, preparation and time spent on all assessable work.

Assessment

A note on all assessments:

- **Assessment guide and marking:** All assessment tasks will have a dedicated *Assessment Guide* that provides further details, including marking criteria.
- **Team evaluation:** All group assessment submissions will have a dedicated *Team Evaluation* survey. Students evaluate the contribution of each team member to the task. The results are then used to moderate individual marks: $\pm 25\%$.
- **Submission:** All assessment tasks are submitted to Moodle.
- **Marks returned:** All submissions should be marked and returned within 2 weeks of the due date.
- **Late penalty:** All late submissions will incur a 20 % penalty per day, with an absolute fail occurring after five days.
- **Special consideration:** For extenuating circumstances, students should submit a [Special Consideration Application](#). Extensions or other arrangements will be made accordingly.

Assessment Tasks

Assessment task	Weight	Due Date	Student Learning Outcomes Assessed
Business proposal	10%	Week 3, Thursday 5:00 pm (June 17)	1, 4, 5
Ethics report	20%	Week 5, Sunday 5:00 pm (July 4)	2, 4, 5, 6
Business pitch	20%	Week 8, Sunday 5:00 pm (July 25)	1, 3, 4, 5
Business plan	50%	Week 10, Sunday 5:00 pm (August 8)	1, 2, 3, 4, 5, 6

Assessment Details

Assessment 1: Business proposal

Start date: Not Applicable

Length: 3 minutes

Details: Present a business proposal that involves some kind of engineering product and or service. Students individually submit a short video recording of the presentation to Moodle. See the project brief and assessment guide for further details.

Submission notes: Moodle

Turnitin setting: This is not a Turnitin assignment

Assessment 2: Ethics report

Start date: Not Applicable

Length: 2000 words

Details: Write a report on an engineering ethical dilemma. Students may choose a topic from a list, or have their own topic pre-approved by their demonstrator before submission. Students individually submit the report to Moodle. See the assessment guide for further details.

Submission notes: Moodle

Turnitin setting: This assignment is submitted through Turnitin and students do not see Turnitin similarity reports.

Assessment 3: Business pitch

Start date: Not Applicable

Length: 10 minutes

Details: Present a business proposal that involves some kind of engineering product and or service. A member from each student team will submit a recording of the video presentation to Moodle. Marks and feedback from the task will be returned within 1-week, to allow teams to implement the feedback in their Business Plan assessment task. See the project brief and assessment guide for further details.

Submission notes: Moodle

Turnitin setting: This is not a Turnitin assignment

Assessment 4: Business plan

Start date: Not Applicable

Length: 30 pages

Details: Write a business plan that involves some kind of engineering product and/or service. A member from each student team will submit the report document to Moodle. See the project brief and assessment guide for further details.

Submission notes: Moodle

Turnitin setting: This assignment is submitted through Turnitin and students do not 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
Week 1: 31 May - 4 June	Lecture	Course introduction <i>Nicholas Gilmore (MMAN3000 Convenor)</i> <i>Imrana Kabir (MMAN3000 Convenor)</i>
	Lecture	Engineering business case study <i>Jason Held (CEO of Saber Astronautics)</i>
	Workshop	Pitching pressure cooker
Week 2: 7 June - 11 June	Lecture	Business planning <i>Burçin Hatipoğlu (Lecturer from UNSW Business Faculty)</i>
	Lecture	Business planning <i>Burçin Hatipoğlu (Lecturer from UNSW Business Faculty)</i>
	Workshop	Business model with lean canvas
Week 3: 14 June - 18 June	Lecture	Engineering business case-study <i>Helmut Mayer (Director of Design Performance)</i>
	Lecture	Introduction to engineering ethics <i>Iain Skinner (Convenor of Strategic Leadership and Ethics at UNSW)</i>
	Workshop	Team formation
Week 4: 21 June - 25 June	Lecture	Ethics, worldviews and informed consent <i>Lewis Jones (Member of the Human Research Ethics Committee at UNSW)</i>
	Lecture	Ethical theory and being an autonomous professional <i>Stephen Cohen (Research expert in the field of ethics)</i>
	Workshop	Ethics case discussions
Week 5: 28 June - 2 July	Lecture	Contract law for engineers <i>Lucy Hancock (Senior Associate at Mills Oakley)</i>
	Lecture	Misleading and deceptive conduct <i>Lucy Hancock (Senior Associate at Mills Oakley)</i>
	Workshop	Diversity and biases
Week 7: 12 July - 16 July	Lecture	Teamwork <i>Paul Grainger (National Professional Development Manager at Professionals Australia)</i>
	Lecture	Writing skills and communication <i>Paul Grainger (National Professional Development</i>

		<i>Manager at Professionals Australia)</i>
	Workshop	Project work
Week 8: 19 July - 23 July	Lecture	Negotiations <i>Paul Grainger (National Professional Development Manager at Professionals Australia)</i>
	Lecture	Networking <i>Paul Grainger (National Professional Development Manager at Professionals Australia)</i>
	Workshop	Project work
Week 9: 26 July - 30 July	Lecture	Resume, cover letter and interviews <i>Katherine Pick (Career Development Consultant at UNSW)</i>
	Lecture	Professional electronic communication <i>Julisa Edwards (TSA Officer, UNSW Engineering)</i>
	Workshop	Project work
Week 10: 2 August - 6 August	Lecture	Thesis <i>Tracie Barber (Undergraduate Thesis Coordinator at UNSW Engineering)</i>
	Lecture	Industrial training <i>Michael Hannon (Industrial Training Manager at UNSW Engineering)</i>
	Workshop	Project work

Resources

Recommended Resources

- UNSW Library website: <https://www.library.unsw.edu.au/>
- Microsoft Teams: shorturl.at/mrl04
- Moodle: <https://moodle.telt.unsw.edu.au/course/view.php?id=59791>

Course Evaluation and Development

Feedback - 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 the streamlining of assessments, implementation of more detailed workshop activities and retention of the thesis, industrial training and job skill lectures.

Microsoft Forms - Throughout the term please submit your anonymous feedback on MMAN3000 using this form: [Suggestion box - MMAN3000](#). Whether it's good or bad we want to know. We're eager to act on your advice throughout the term, instead of waiting till myExperience at the end. You may complete the form as many times as you like and all questions are optional.

MechSoc - You can also provide feedback to MechSoc who will raise your concerns at student focus group meetings. As a result of previous feedback obtained for this course and in our efforts to provide a rich and meaningful learning experience, we have continued to evaluate and modify our delivery and assessment methods including updated lecture notes, workshops, blended learning resources, in-class demonstrations, and industry guest lectures.

Laboratory Workshop Information

Workshops will be conducted on campus or online depending on your mode of enrollment. Please ensure that you are in the right workshop that fits your availability. For on-campus workshops, on-campus attendance is expected. See also the on-campus class attendance section further below for general information on public health issues and enrollment changes.

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

Design Next, 2021

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	✓