



Mechanical and Manufacturing Engineering

# Course Outline

Term 2 2020

**MMAN3000**

## **PROFESSIONAL ENGINEERING AND COMMUNICATION**

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# 1. Staff contact details

## Contact details and consultation times for course convenor

Name: Dr Zoran Vulovic

Tel: (02) 9385 6261

Email: [z.vulovic@unsw.edu.au](mailto:z.vulovic@unsw.edu.au)

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

Microsoft Teams Video Chat Hours:

*The preferred mode of consultations is **MS Teams** video chat. The times will be announced during Week 1. The **Moodle** discussion forum is an equally acceptable method as you will be able to get the answer outside the consultation times. **Face-to-face** consultations are possible in Dr Vulovic's office (Ainsworth Building, Room 311D), but a prior appointment is recommended. The current restrictions allow only one visitor at the time with strict social distancing. **Email and telephone** can also be used for solving more general issues.*

## Contact details and consultation times for additional lecturers/demonstrators/lab staff

Name: Olivia Ng (lead demonstrator)

Email: [olivia.ng@unsw.edu.au](mailto:olivia.ng@unsw.edu.au)

The most efficient way of communication is MS Teams video chat, and consultation hours will be published during Week 1. Moodle forum is an equally acceptable method for course related issues outside of consultation hours. MS Teams personal chat and email is only for more general/personal issues.

**Contact details and consultation times for class demonstrators will be announced in tutorials.**

Please see the course [Moodle](#).

## 2. 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](#)

### 3. Course details

#### Credit points

This is a 6 unit-of-credit (UoC) course and involves 4.5 hours per week (h/w) of scheduled online contact.

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.

You should aim to spend about 17 h/w on this course. The additional time should be spent in making sure that you understand the lecture material, completing the set assignments, further reading, and revising for any examinations.

#### Contact hours

	Day	Time	Location
<b>Lectures</b>	Wednesday	11.00 – 13.00	Microsoft Teams Live Event
	Thursday	11.00 – 13.00	Microsoft Teams Live Event
<b>Demonstrations</b>	Please check your timetable	Please check your timetable	Microsoft Teams Live Event

In some cases lectures may be replaced with seminar/tutorial/consultations. An announcement will be made on Moodle beforehand.

All classes in T2 2020 will be online. Please consult this course's Moodle module for details about delivery.

#### Summary and Aims of the course

Professional Engineers are primarily concerned with the advancement of technologies and with the development of new technologies through research and their applications through innovation, creativity and change.

As future engineers, you may have already discovered that having technical skills is only part of the attributes and characteristics required for you to successfully practice engineering.

This course exposes you to fundamental elements underpinning the profession and explores the professional and personal attributes required by you to practice engineering, and thus enable you to respond to future challenges faced by society.

MMAN3000 takes a holistic approach to engineering with the goal of preparing you for life as a professional engineer.

The course will provide you with the opportunities to thoughtfully consider and respond to issues around being a global citizen, including legal and ethical responsibilities as well as how to communicate effectively.

Part of being a professional engineer requires the ability for you to work with others, and so an emphasis on leadership and teamwork is developed throughout the course.

### Student learning outcomes

This course is designed to address the learning outcomes below and the corresponding Engineers Australia Stage 1 Competency Standards for Professional Engineers as shown. The full list of Stage 1 Competency Standards may be found in Appendix A.

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

Learning Outcome		EA Stage 1 Competencies
1.	Understand what it means to be a professional engineer and how to apply it to oneself.	PE1.1, 1.6 PE2.1, 2.4 PE3.1, 3.3, 3.4, 3.5, 3.6
2.	Be able to apply high-level research as well as project management skills.	PE1.1, 1.2, 1.4, 1.5, 1.6 PE2.1, 2.2, 2.3, 2.4 PE3.2, 3.6
3.	Be able to communicate effectively, both orally and in written form across a variety of media types.	PE1.1, 1.6 PE2.2, 2.4 PE3.1, 3.2, 3.4, 3.5, 3.6
4.	Demonstrate effective team membership and team leadership.	PE3.1, 3.2, 3.3, 3.4, 3.5, 3.6

## 4. Teaching strategies

Lectures in the course are designed to cover the terminology, core concepts and fundamental aspects of being a professional engineer. The relationship between each area will be explored and developed so as to highlight the importance of an integrated approach to solving engineering problems.

Industry examples are used to illustrate how the theory is applied in practice and the details of when, where and how it should be applied.

The demonstrations are designed to provide you with the opportunity to put your learning into practice and allow you to strengthen your understanding of key concepts.

## 5. Course schedule

	<b>Wednesday 11.00-13.00</b>	<b>Thursday 11.00-13.00</b>
<b>Week 1</b>	03/06/2020 Vulovic (introduction)	04/06/2020 Whitty (project planning)
<b>Week 2</b>	10/06/2020 Ellis (academic integrity)	11/06/2020 Granger (teamwork)
<b>Week 3</b>	17/06/2020 Hannan / Jogoo (industrial training)	18/06/2020 seminar (organising your thesis)
<b>Week 4</b>	24/06/2020 Pick (jobs and careers)	25/06/2020 consultations
<b>Week 5</b>	01/07/2020 Hancock (engineering contracts)	02/07/2020 Hancock (engineering contracts 2)
<b>Week 6</b>	08/07/2020 Grainger (writing skills)	09/07/2020 Grainger (communications)
<b>Week 7</b>	15/07/2020 Grainger (negotiations)	16/07/2020 consultations
<b>Week 8</b>	22/07/2020 Edwards (electronic communications)	23/07/2020 consultations
<b>Week 9</b>	29/07/2020 Duquette (networking)	30/7/2020 consultations
<b>Week 10</b>	05/08/2020 contingency	06/08/2020 contingency

**Important: The order of the lectures, as well as the topics, may change at short notice. Please refer to Moodle announcements.**

# 6. Assessment

## Assessment overview

Assessment	Group Project?	If Group, # Students per group	Length	Weight	Learning outcomes assessed	Assessment criteria	Due date and submission requirements	Deadline for absolute fail	Marks returned
Group assignment	Yes	7-9	25 pages (team) + 10 pages (individual) + 10 minutes (presentation)	55% (20% team report + 25% individual report + 10% presentation)	1, 2, 3 and 4	Refer to assessment task	Team report: 7 <sup>th</sup> August (Week 10); Individual report: 15 <sup>th</sup> August (Week 11); Presentation: 31 <sup>st</sup> July August (Week 9)	Team report: 12 <sup>th</sup> August; Individual report: 20 <sup>th</sup> August; Presentation N/A	Two weeks after submission
Thesis proposal	No	N/A	10 pages	28%	1 and 3	Refer to assessment task	5 <sup>th</sup> July 2019 (Week 5)	11 <sup>th</sup> July 2019	Two weeks after submission
Online completions	No	N/A	Refer to assessment task	17% (Refer to individual assessment task)	1 and 3	Refer to assessment task	Refer to assessment task	Refer to assessment task	Two weeks after submission

## **Assignments**

This course does not have a final examination. However, the individual report will be due during the examination period.

### *Presentation*

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.

### *Submission*

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:

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

### *Marking*

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.

## **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 submitting an assessment or sitting an exam.



**Please note** that 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](#).

## 7. Expected resources for students

### Suggested readings

Gray C.F. and Larson E.W. Project Management, 6<sup>th</sup> edition, McGraw Hill International edition, 2014. ISBN: 9781743071809

Eisenberg, A., 1992, Effective Technical Communication, 2nd Ed., McGraw-Hill, New York.  
AGPS, 1994, Style Manual for Authors, Editors and Printers, 5th ed., Australian Government Publishing Service, Canberra.

Anderson, J. and Poole, M., 1995, Thesis and Assignment Writing, 2nd ed., Jacaranda Wiley, Brisbane.

AS1000-1979, The International System of Units (SI) and its Application, Standards Australia, Sydney.

AS1376-1973, Conversion Factors, Standards Australia, Sydney.

Bernard, J.R.L., 1986, The Macquarie Thesaurus, revised ed., Macquarie Library, Sydney.

Delbridge, A., 1991, The Macquarie Dictionary, 2nd revision, Macquarie Library, Sydney.  
Dykes, B., 1992, Grammar Made Easy, Hale & Iremonger, Sydney.

Eagleson, R.D., 1990, Writing in Plain English, Australian Government Publishing Service, Canberra.

Hardie, R. G., 1990, English Grammar, Harper Collins Publishers, Glasgow.

Knuth, D.E., 1984, The TEXbook, Addison-Wesley, Reading MA.

Lamport, L., 1994, LATEX: A Document Preparation System, 2nd ed., Addison-Wesley, Reading MA.

Mohan, T., McGregor, H. Saunders, S. and Archee, R., 1997, Communicating! Theory and Practice, Harcourt Brace and Co., Sydney.

Peters, P., 1995, The Cambridge Australian English Style Guide, Cambridge University Press, Cambridge.

Rathbone, R.R., 1985, Communicating Technical Information, Addison-Wesley, Reading MA.

Martin, M.W., Schinzinger, R., Ethics in Engineering, 4<sup>th</sup> Edition, McGraw-Hill. ISBN: 0-07-283115-4

### Recommended Internet sites

Engineers Australia provides a wide range of resources useful for developing your professional standing as an engineer within Australia:

<https://www.engineersaustralia.org.au>

The Online Ethics Centre for Engineering and Science: <http://www.onlineethics.org/>

There are many websites giving lectures, papers and data on project management in general. A useful reference site is <http://www.pmi.org>

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

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

## 8. 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 an improved selection of guest lectures and topic that would cover the soft skills not addressed last year. All other changes are dictated by the requirement to deliver the course on-line.

## 9. 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)

## 10. 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](#)

# Appendix A: Engineers Australia (EA) Competencies

## Stage 1 Competencies for Professional Engineers

	<b>Program Intended Learning Outcomes</b>
<b>PE1: Knowledge and Skill Base</b>	PE1.1 Comprehensive, theory-based understanding of underpinning fundamentals
	PE1.2 Conceptual understanding of underpinning maths, analysis, statistics, computing
	PE1.3 In-depth understanding of specialist bodies of knowledge
	PE1.4 Discernment of knowledge development and research directions
	PE1.5 Knowledge of engineering design practice
	PE1.6 Understanding of scope, principles, norms, accountabilities of sustainable engineering practice
<b>PE2: Engineering Application Ability</b>	PE2.1 Application of established engineering methods to complex 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
<b>PE3: Professional and Personal Attributes</b>	PE3.1 Ethical conduct and professional accountability
	PE3.2 Effective oral and written communication (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