



Mechanical and Manufacturing Engineering

Course Outline

Term 2 2019

MMAN3000

**PROFESSIONAL ENGINEERING AND
COMMUNICATION**

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1. Staff contact details

Contact details and consultation times for course convenor

Name: Zoran Vulovic (course convenor)
Office location: Ainsworth Building, room 311D
Tel: (02) 9385 6261
Email: z.vulovic@unsw.edu.au
Moodle: <https://moodle.telt.unsw.edu.au/login/index.php>

The most efficient way of communication is the Moodle forum. Face-to-face consultations, email or telephone can also be used.

Face-to-face consultations will take place in Dr. Vulovic's office. The consultation timeslot will be announced later. Consultations are possible outside the set time, but a prior appointment is preferred.

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

Name: Olivia Ng (lead demonstrator)
Email: olivia.ng@unsw.edu.au

The most efficient way of communication is the Moodle forum. Face-to-face consultations are by appointment only. Email is also a viable option.

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

Please see the course [Moodle](#).

2. Important links

- [Moodle](#)
- [Lab Access](#)
- [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 6 hours per week (h/w) of face-to-face 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 12 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
Lectures	Tuesday	10am - 12noon	Clancy Auditorium
Lectures / Seminars / Consultations	Friday	9am – 11am	Clancy Auditorium
Demonstrations	Please check your timetable	Please check your timetable	Please check your timetable

Please refer to your class timetable for the learning activities you are enrolled in and attend only those classes.

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 our 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

	Tuesday 10.00-12.00	Friday 9.00-11.00
Week 1	4/06/2019 Vulovic	7/06/2019 Whitty
Week 2	11/06/2019 Grainger (teamwork)	14/06/2019 Ellis
Week 3	18/06/2019 Hennan / Jogoo (industrial training)	21/06/2019 seminar
Week 4	25/06/2019 Pick	28/06/2019 consultations
Week 5	2/07/2019 Hancock	5/07/2019 Hancock
Week 6	9/07/2019 Grainger (writing skills)	12/07/2019 Edwards
Week 7	16/07/2019 Grainger (negotiations)	19/07/2019 consultations
Week 8	23/07/2019 Grainger (communications)	26/07/2019 consultations
Week 9	30/07/2019 Duquette (networking)	2/08/2019 consultations
Week 10	6/08/2019 contingency	9/08/2019 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	6-8	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: 9 th August (Week 10); Individual report: 13 th August (Week 11)); Presentation: 31 st July and 1 st August (Week 9)	Team report: 14 th August; Individual report: 18 th August; Presentation N/A	Two weeks after submission
Thesis proposal	No	N/A	10 pages	28%	1 and 3	Refer to assessment task	12 th July 2019 (Week 6)	18 th July 2019	Two weeks after submission
Online completions	No	N/A	Refer to assessment task	Refer to assessment task	1 and 3	Refer to assessment task	Refer to assessment task	Refer to assessment task	Two weeks after submission

Assignments

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.

Examinations

There is no final examination in this course.

However, you must be available for all team meetings and presentations. In addition, you must attend a certain number of presentations by other teams, groups and individuals. The exact numbers will be specified later.

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 sit 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, 6th 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 Archeon, 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.

Roth, R.N. and van Haeringen, I.A., 1988, Australian Engineering Drawing

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

Additional materials provided in UNSW Moodle

This course uses UNSW Moodle (<http://moodle.telt.unsw.edu.au>).
Items found on UNSW Moodle include:

- Web-based activities
- Copies/recordings of lectures
- Class announcements

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:

- Most lectures delivered by guest speakers will have a small (2-5%) assessment task associated with them;
- The weight of the group and individual reports are reduced by 5 marks each;
- The length of team meetings is increased

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. 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

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](#)
- [Computing Facilities](#)
- [Special Consideration](#)
- [Exams](#)
- [Approved Calculators](#)
- [Academic Honesty and Plagiarism](#)
- [Student Equity and Disabilities Unit](#)
- [Health and Safety](#)
- [Lab Access](#)

7th May 2019
Zoran Vulovic

Appendix A: Engineers Australia (EA) Competencies

Stage 1 Competencies for Professional Engineers

	Program Intended Learning Outcomes
PE1: Knowledge and Skill Base	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
PE2: Engineering Application Ability	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
PE3: Professional and Personal Attributes	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