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  

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

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures</td>
<td>Tuesday</td>
<td>10am - 12noon</td>
</tr>
<tr>
<td>Lectures /</td>
<td>Friday</td>
<td>9am – 11am</td>
</tr>
<tr>
<td>Seminars /</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consultations</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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:

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

**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

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Time</th>
<th>Lecturer</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4/06/2019</td>
<td>Tuesday</td>
<td>Vulovic</td>
<td>10.00-12.00</td>
</tr>
<tr>
<td></td>
<td>7/06/2019</td>
<td>Friday</td>
<td>Whitty</td>
<td>9.00-11.00</td>
</tr>
<tr>
<td>2</td>
<td>11/06/2019</td>
<td>Tuesday</td>
<td>Grainger</td>
<td>10.00-12.00</td>
</tr>
<tr>
<td></td>
<td>14/06/2019</td>
<td>Friday</td>
<td>Ellis</td>
<td>9.00-11.00</td>
</tr>
<tr>
<td>3</td>
<td>18/06/2019</td>
<td>Tuesday</td>
<td>Hennan / Jogoo</td>
<td>10.00-12.00</td>
</tr>
<tr>
<td></td>
<td>21/06/2019</td>
<td>Friday</td>
<td></td>
<td>9.00-11.00</td>
</tr>
<tr>
<td>4</td>
<td>25/06/2019</td>
<td>Tuesday</td>
<td>Pick</td>
<td>10.00-12.00</td>
</tr>
<tr>
<td></td>
<td>28/06/2019</td>
<td>Friday</td>
<td></td>
<td>9.00-11.00</td>
</tr>
<tr>
<td>5</td>
<td>2/07/2019</td>
<td>Tuesday</td>
<td>Hancock</td>
<td>10.00-12.00</td>
</tr>
<tr>
<td></td>
<td>5/07/2019</td>
<td>Friday</td>
<td>Hancock</td>
<td>9.00-11.00</td>
</tr>
<tr>
<td>6</td>
<td>9/07/2019</td>
<td>Tuesday</td>
<td>Grainger</td>
<td>10.00-12.00</td>
</tr>
<tr>
<td></td>
<td>12/07/2019</td>
<td>Friday</td>
<td>Edwards</td>
<td>9.00-11.00</td>
</tr>
<tr>
<td>7</td>
<td>16/07/2019</td>
<td>Tuesday</td>
<td>Grainger</td>
<td>10.00-12.00</td>
</tr>
<tr>
<td></td>
<td>19/07/2019</td>
<td>Friday</td>
<td></td>
<td>9.00-11.00</td>
</tr>
<tr>
<td>8</td>
<td>23/07/2019</td>
<td>Tuesday</td>
<td>Grainger</td>
<td>10.00-12.00</td>
</tr>
<tr>
<td></td>
<td>26/07/2019</td>
<td>Friday</td>
<td></td>
<td>9.00-11.00</td>
</tr>
<tr>
<td>9</td>
<td>30/07/2019</td>
<td>Tuesday</td>
<td>Duquette</td>
<td>10.00-12.00</td>
</tr>
<tr>
<td></td>
<td>2/08/2019</td>
<td>Friday</td>
<td></td>
<td>9.00-11.00</td>
</tr>
<tr>
<td>10</td>
<td>6/08/2019</td>
<td>Tuesday</td>
<td></td>
<td>10.00-12.00</td>
</tr>
<tr>
<td></td>
<td>9/08/2019</td>
<td>Friday</td>
<td></td>
<td>9.00-11.00</td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Group Project?</th>
<th>If Group, # Students per group</th>
<th>Length</th>
<th>Weight</th>
<th>Learning outcomes assessed</th>
<th>Assessment criteria</th>
<th>Due date and submission requirements</th>
<th>Deadline for absolute fail</th>
<th>Marks returned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group assignment</td>
<td>Yes</td>
<td>6-8</td>
<td>25 pages (team) + 10 pages (individual) + 10 minutes (presentation)</td>
<td>55%</td>
<td>1, 2, 3 and 4</td>
<td>Refer to assessment task</td>
<td>Team report: 9th August (Week 10); Individual report: 13th August (Week 11); Presentation: 31st July and 1st August (Week 9)</td>
<td>Team report: 14th August; Individual report: 18th August; Presentation N/A</td>
<td>Two weeks after submission</td>
</tr>
<tr>
<td>Thesis proposal</td>
<td>No</td>
<td>N/A</td>
<td>10 pages</td>
<td>28%</td>
<td>1 and 3</td>
<td>Refer to assessment task</td>
<td>12th July 2019 (Week 6)</td>
<td>18th July 2019</td>
<td>Two weeks after submission</td>
</tr>
<tr>
<td>Online completions</td>
<td>No</td>
<td>N/A</td>
<td>Refer to assessment task</td>
<td>Refer to assessment task</td>
<td>1 and 3</td>
<td>Refer to assessment task</td>
<td>Refer to assessment task</td>
<td>Refer to assessment task</td>
<td>Two weeks after submission</td>
</tr>
</tbody>
</table>
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


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


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

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


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/

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](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 polices. 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*

<table>
<thead>
<tr>
<th>PE1: Knowledge and Skill Base</th>
<th>Program Intended Learning Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>PE1.1</td>
<td>Comprehensive, theory-based understanding of underpinning fundamentals</td>
</tr>
<tr>
<td>PE1.2</td>
<td>Conceptual understanding of underpinning maths, analysis, statistics, computing</td>
</tr>
<tr>
<td>PE1.3</td>
<td>In-depth understanding of specialist bodies of knowledge</td>
</tr>
<tr>
<td>PE1.4</td>
<td>Discernment of knowledge development and research directions</td>
</tr>
<tr>
<td>PE1.5</td>
<td>Knowledge of engineering design practice</td>
</tr>
<tr>
<td>PE1.6</td>
<td>Understanding of scope, principles, norms, accountabilities of sustainable engineering practice</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PE2: Engineering Application Ability</th>
<th>Program Intended Learning Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>PE2.1</td>
<td>Application of established engineering methods to complex problem solving</td>
</tr>
<tr>
<td>PE2.2</td>
<td>Fluent application of engineering techniques, tools and resources</td>
</tr>
<tr>
<td>PE2.3</td>
<td>Application of systematic engineering synthesis and design processes</td>
</tr>
<tr>
<td>PE2.4</td>
<td>Application of systematic approaches to the conduct and management of engineering projects</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PE3: Professional and Personal Attributes</th>
<th>Program Intended Learning Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>PE3.1</td>
<td>Ethical conduct and professional accountability</td>
</tr>
<tr>
<td>PE3.2</td>
<td>Effective oral and written communication (professional and lay domains)</td>
</tr>
<tr>
<td>PE3.3</td>
<td>Creative, innovative and pro-active demeanour</td>
</tr>
<tr>
<td>PE3.4</td>
<td>Professional use and management of information</td>
</tr>
<tr>
<td>PE3.5</td>
<td>Orderly management of self, and professional conduct</td>
</tr>
<tr>
<td>PE3.6</td>
<td>Effective team membership and team leadership</td>
</tr>
</tbody>
</table>