UNSW SYDNEY | Australia's Global University

Mechanical and Manufacturing Engineering

Course Outline

Term 2 2019

MMAN4020

THESIS B (PRACTICE)

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1. Staff contact details

Contact details and consultation times for course convenor

Mr David Lyons CEng FRINA MIEAust GCULT
Office location: Ainsworth J17 208D
Tel: (02) 9385 6120
Email: david.lyons@unsw.edu.au (email is the best form of contact)
Moodle: https://moodle.telt.unsw.edu.au/course/view.php?id=41755

It is recommended you email the course convenor to make a specific appointment if you need to discuss any important issues. Always consult the course Moodle first in case your questions have already been answered.

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

You will be working in groups with the assistance of an **Academic Adviser** and **Mentor**. Please see the course Moodle for details of your group allocation and Mentor contact details.

Name: Ms Julisa Edwards – **BE Thesis administrator**
Office location: Ainsworth J17 Level 1, Student Services Office
Tel: (02) 9385 5782
Email: mech.teaching@unsw.edu.au

Contact Ms Edwards directly if you have issues relating to your enrolment, progress, or other administrative queries.

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 a variable number of hours per week (h/w) of face-to-face contact with your Academic Advisers, Mentor and your group members,

combined with online Moodle activities.

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 as a minimum, 9 h/w on this course. The additional time should be spent in making sure that you understand the topic material, completing the set assignments and further reading.

Contact hours

In accordance with your group's arrangements with your Academic Adviser and Mentor.

Summary and Aims of the course

Thesis (Practice) allows each student to work under the guidance of Academic Advisers and Mentors, possibly with input from technical (industry/research/practitioner) specialists. Topics are related to projects selected from contemporary practice. The work involves research-based investigations, industrial problems and conceptual design applications.

This course enhances the student's skills for undertaking scholarly enquiry by attempting to achieve a specific topic objective within a defined period of time. A significant component of the course relates to the review of literature, which promotes independent and reflective learning as well as increases students' 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 presentations and at group meetings.

This course is the second of two parts and is undertaken after the first part, MMAN4010 Practice Thesis A. They are two parts of a whole. The project involves formulating the conceptual designs for, and solutions to, a continuing open-ended engineering problem called a **Common Interdisciplinary Open-Ended Projects[1] ("CIOP")**. The problems have been drawn from contemporary practice and are multi-disciplinary, involving the application of material learnt throughout your undergraduate program and require a lot of creative thought. Building on Practice Thesis A, Practice Thesis B culminates in a Final Report.

The full text of the four continuing CIOP Briefings are posted on the course Moodle:

Humanitarian • Energy • Health • Transportation

Practice Thesis is to be completed in two consecutive trimesters during the last academic year before graduation. You should be enrolled in Practice Thesis B in the term after Practice Thesis A. It is not the responsibility of the course coordinator, Academic Adviser or Mentor to tell the student what to do, nor should it be assumed that your

[1] You continue in your Practice Thesis A group: **Humanitarian • Energy • Health • Transport**

Academic Adviser or Mentor is an expert in all areas of engineering. Your Academic Adviser and Mentor are there to offer guidance and advice. The successful execution of the project is solely the responsibility of the student, working within her/his group.

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.	Conduct independent research and apply established theories to address an engineering problem that does not have a well-defined solution	PE2.1, 2.3, 2.4, 3.3
2.	Analyse critically, reflect on and synthesise complex information, problems, concepts and theories.	PE2.1, 2.3, 2.4
3.	Interpret and transmit knowledge, skills and ideas to specialist and non-specialist audiences.	PE2.4, 3.2, 3.4
4.	Demonstrate managerial skills and individual responsibility to complete a project within limited time and resources.	PE3.4, 3.5, 3.6

4. Teaching strategies

Online advice and strategies to assist your independent project work may be provided via Moodle. Student groups are expected to meet their Mentors and Academic Advisers face-to-face on a weekly basis, to post updates on progress and to seek feedback and guidance. Online contact with other group members and your Academic Adviser or Mentor via the Moodle Group Forum (MGF) is to be conducted on a very regular, ongoing and as-needed weekly basis – attendance and contribution are mandatory.

5. Course schedule

Week	**Expected Task Completion: Upload minutes to your Moodle Group Forum (MGF) weekly. Deliverables are tasks that must be completed and are assessed.**
Week 1	Weekly group meeting with Mentor. **Deliverable:** Produce minutes and post to MGF
Week 2	Weekly group meeting with Academic Adviser. **Deliverable:** Produce minutes and post to MGF
Week 3	Weekly group meeting with Mentor. **Deliverable:** Produce minutes and post to MGF
Week 4 (Census date 30 June 2019)	Weekly group meeting with Academic Adviser. **Deliverable:** Produce minutes and post to MGF **Deliverable: Interim report and presentation (10%) – refer to Moodle for rubric and requirements**

Week	Expected Task Completion: **Upload minutes to your Moodle Group Forum (MGF) weekly. Deliverables are tasks that must be completed and are assessed.**
Week 5	Weekly group meeting with Mentor. **Deliverable:** Produce minutes and post to MGF
Week 6	Weekly group meeting with Academic Adviser. **Deliverable:** Produce minutes and post to MGF
Week 7	Weekly group meeting with Mentor. **Deliverable:** Produce minutes and post to MGF
Week 8	Weekly group meeting with Academic Adviser. **Deliverable:** Produce minutes and post to MGF
Week 9	Weekly group meeting with Mentor. **Deliverable:** Produce minutes and post to MGF
Week 10	**Deliverable: Submission of final report (80%) – refer to Moodle for rubric and requirements** **Deliverable: Final group presentation (10%) – refer to Moodle for rubric and requirements**
Week 11	Tuesday: Best thesis Prize Function. Winning group announced and prizes awarded

Note: some details of the Course Schedule are subject to alteration to suit exigencies. Updates may be posted on the course Moodle OR consult your Mentor or Academic Adviser.

6. Assessment

Assessment overview

Assessment	Group/Individual	If Group, # Students per group	Length	Weight	Learning outcomes assessed	Assessment criteria	Due date and submission requirements	Deadline for absolute fail	Marks returned
1. Interim report & discussion	Individual (within portfolio)	5-7	Participation in discussion (ref Moodle) + Report (length refer Moodle)	10%	1 to 4	See marking rubrics on Moodle	Discussion during Week 4; Written submission: 5pm Fri Week 4 via Moodle	Discussion: Unsatisfactory if absent; Satisfactory if present. Written submission: One week after due date	Two weeks after presentation or submission
2. Face-to-face (F2F) presentation	Group presentation	5-7	10-minute live presentation	10%	1 to 4	See marking rubrics on Moodle	During Week 10	Presentation: Must be present else fail without Special Consideration	Upon release of final results
3. Final Report	Individual reports (within portfolio) + individual contribution to group's *Consolidated Conclusive Statement*	5-7	Refer Moodle	80%	1 to 4	See marking rubrics on Moodle	Submission: 5pm Fri Week 10 via Moodle	Two weeks after due date	Upon release of final results
4. Mentor and Peer Review	No	N/A	N/A	-	4	See *6.Assessment*	See Moodle	N/A	Upon release of final results

Updates to any aspects of Assessment will be posted on the course Moodle.

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 on Moodle at the same time as assignment details to assist with meeting assessable requirements. Submissions will be marked according to the marking guidelines provided.

Mentor and Peer assessment

To ensure that all students participate equitably in group tasks, there will be a **Mentor and Peer Review** process whereby each student will be evaluated by their group's Mentor and/or Academic Adviser and every member of their team, as necessary. **The results of this Peer Review can affect your final mark.** Details of this process will be made available on *Moodle*.

Acknowledging the work of others

All quoted sources must be clearly referenced in a Bibliography at the end of all written work using a single referencing system (e.g. https://student.unsw.edu.au/apa). In-text citation and referencing of all figures, tables and diagrams etc. that are taken from other works must be undertaken in full compliance with the chosen single referencing system (see *9. Academic honesty and plagiarism*). If in doubt, consult http://www.lc.unsw.edu.au/

Examinations

There is no examination in this course.

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

Content on the course Moodle page will be updated often with tips, discussions and resources, so you are strongly advised to make sure you check for all updates.

In addition:
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.

This course has moved to a new group project format in T2-2019, continuing from MMAN4010 that you undertook in T1-2019.

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 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

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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