UNSW SYDNEY | Australia's Global University

Mechanical and Manufacturing Engineering

Course Outline

Term 2 2020

MMAN9002

MASTER OF ENGINEERING SCIENCE PROJECT B

Contents

1. Staff contact details

Contact details and consultation times for course convenor

Name: Dr Ron Chan
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Moodle: https://moodle.telt.unsw.edu.au/login/index.php

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 a **Mentor**. Please see the course Moodle for details of your group allocation and Mentor contact details.

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 1 hour 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 8 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

Please refer to the Moodle Group set up for your group for details of online contact with your Mentor and other group members, online interaction and related activities.

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

Master of Engineering Science Project allows each student to work under the guidance of academic staff and Mentors 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 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 project 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 MMAN9001 Master of Engineering Science Project A. The thesis involves formulating the designs for and solutions to open-ended engineering problems called **Common Interdisciplinary Open-Ended Projects.** The problems will be drawn from contemporary practice and will be multi-disciplinary, involving the application of material learnt throughout your postgraduate program and will require a lot of creative thought. Project B includes the formulation of a Final Report, which provides all findings of Project A and B.

The group project is to be completed in two consecutive trimesters during the last academic year before graduation. It is not the responsibility of the course coordinator or Mentor to tell the student what to do, nor should it be assumed that your Mentor is an expert in all areas of engineering. Your Mentor is there to offer guidance and advice, as are other staff in the School (you should always seek an appointment by prior arrangement) that may have expertise in the area of your project. The successful execution of the project is solely the responsibility of the student.

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 will be provided via Moodle. Student groups are expected to meet their Mentors using online platform, to provide updates on progress and to seek feedback and guidance. Attendance to the online meeting with the mentors and contribution is mandatory.

5. Course schedule

The course involves weekly online meeting with their Mentors; teams are to provide updates on the group and individual progress on the project. Instant feedback will be provided on-the-spot.

6. Assessment

Assessment overview

Assessment	Group Project? (# Students per group)	Length	Weight	Learning outcomes assessed	Assessment criteria	Due date and submission requirements	Deadline for absolute fail	Marks returned
Presentation	Yes (4)	15 *mins*	20%	1 to 4	See marking rubrics on Moodle	5pm Fri Week 10	N/A	Upon release of final results
Final Report	No	2 hours	80%	1 to 4	See marking rubrics on Moodle	5pm Fri Week 10 via Moodle	One week after due date	Upon release of final results

Assignments

Presentation

All non-electronic submissions should have a standard School cover sheet, which is available from this course's Moodle page.

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

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.

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.

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
- Special Consideration
- Exams
- Approved Calculators
- Academic Honesty and Plagiarism
- Equitable Learning Services

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