



Course Outline

Semester 1, 2015

Never Stand Still

Faculty of Engineering

School of Mechanical and Manufacturing Engineering

MMAN4010

Thesis A

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MMAN4010 THESIS A

COURSE OUTLINE

1. STAFF CONTACT DETAILS

All academic staff together with some senior engineers from industry act as supervisors to the students undertaking BE thesis work. Support is also provided by the workshop and laboratory staff.

Contact details of the Course Coordinator

Associate Professor Tracie Barber
School of Mechanical and Manufacturing Engineering
Electrical Engineering Room 464H
Tel (02) 9385 4081
Email t.barber@unsw.edu.au

It is recommended you email to make a specific appointment if you need to discuss any important issues, particularly if you want to discuss extensions, supervisor issues, etc. Always consult the course Moodle first in case your questions have already been answered, or in the event that others may benefit from reading what you are asking and the response.

Contact details of the Thesis Administrator

Contact Kane directly, cc'ing Tracie, if you have issues relating to your enrolment, progress, or other administrative queries of a technical nature.

Mr Kane Murdoch School of Mechanical and Manufacturing Engineering
General Office Tel (02) 9385 4154
kane.murdoch@unsw.edu.au

2. COURSE DETAILS

Units of credit

This is a 6 unit-of-credit (UoC) course, but there are no prescribed contact hours per week other than what you have arranged with your supervisor.

It is essential that you consult the Moodle site for the most up-to-date and detailed information relating to the thesis.

The UNSW website states “The normal workload expectations of a student are approximately 25 hours per semester for each UoC, including class contact hours, learning activities, preparation and time spent on all assessable work.”

However, in this course you have no class contact hours and no assessable work other than your thesis submission.

For a standard 24 UoC in the semester, this means 600 hours, spread over an effective 15 weeks of the semester (thirteen weeks plus stuvac plus one effective exam week), or 40 hours per week, for an average student aiming for a credit grade. Various factors, such as your own ability, your target grade, etc., will influence the time needed in your case.

Some students spend much more than 40 h/w, but you should aim for not less than 40 h/w on coursework for 24 UoC.

This means that you should aim to spend not less than about 10 h/w on this course, including consultation with supervisor and workshop/laboratory staff and library/internet search. However, most students spend more time on their thesis work.

Parallel teaching

There is no parallel teaching in this course.

Summary of the course

BE Thesis is usually completed in two consecutive semesters during the last academic year. This is the only course where the students have complete freedom to work on his/her chosen thesis projects from the initiation to the end – the project contains a large amount of original research and/or novel design work or analysis. It is not the responsibility of the supervisor to tell the student what to do, nor should it be assumed that the supervisor is an expert in all areas of engineering. They are there to offer guidance and advice, as are laboratory staff, workshop staff, and others in the school that may have expertise in the area of your project. The successful execution of the project is solely the responsibility of the student.

Aims of the course

Thesis A is to be taken in the second last semester required for the completion of all requirements for the award of the degree. This course, together with MMAN4020 Thesis B, which is to be taken in the following semester, requires each student to demonstrate managerial, technical and professional skills in planning and executing an approved engineering project within a stipulated time limit. Each student is guided by a supervisor, but successfully planning, executing and reporting on the project are the sole responsibility of each student. Thesis A does not require the submission of a thesis document, but a progress report is mandatory. A satisfactory grade in this course is provisional pending successful completion of MMAN4020.

Laboratory Staff

The laboratories are the responsibility of the staff-in-charge and you must operate within the accepted practices of the laboratory concerned. You should not expect laboratory staff to take responsibility for your thesis or carry out work for you. The laboratory staff are highly skilled and helpful; take full advantage of their experience.

If your project involves laboratory work, contact the officer-in-charge (OIC) of the laboratory in which you will be working as soon as possible to discuss your

requirements. They will issue you with a Laboratory Access Approval (LAA) form which you must complete and return to the OIC.

Before you start work in a laboratory or undertake any activity which might be considered hazardous in any way, you must read and understand the practices and procedures described in the OHS section of the School's website.

Workshop

All student activities requiring manufacture in the Workshop should be discussed with the Workshop personnel at the inception of the work. The Workshop personnel must have the opportunity to advise and influence the design to help minimise assembly, manufacture or functional problems.

The Workshop is usually in high demand. If you require the Workshop to manufacture equipment essential to your thesis, then make sure that you discuss your requirements as early as possible with the Workshop/Laboratory Manager. You should provide engineering drawings which are first approved by the laboratory officer-in-charge. You should make every effort to minimise the Workshop load by modifying existing equipment rather than building from new, and by keeping your designs simple.

Safety Training

A full list of safety training requirements for BE Thesis students is available on the School's website. Safety in any project is paramount and it is mandatory to complete risk paperwork for all activities. Always discuss with your supervisor what your plans are and what risk assessments will be required.

Student Learning Outcomes

- You will be able to plan a major engineering project and see it to completion.
- You will learn how to collect and synthesise relevant information for the project.
- Learn project-specific skills such as how to design novel hardware and/or software to be used in the project.
- You will learn to communicate with others involved in the project, including professional-level discussions with your supervisor, workshop staff, and others helping you.
- You'll be able to produce a detailed, professional-standard technical document describing your work and outcomes and the "why" as much as the "what".

Graduate attributes

UNSW's graduate attributes are shown at <https://my.unsw.edu.au/student/atoz/GraduateAttributes.html>

UNSW aspires to develop graduates who are rigorous scholars, capable of leadership and professional practice in a global community. The university has, thus, articulated the following Graduate Attributes as desired learning outcomes for ALL UNSW students.

UNSW graduates will be

1. Scholars who are:
 - (a) understanding of their discipline in its interdisciplinary context ✓
 - (b) capable of independent and collaborative enquiry ✓
 - (c) rigorous in their analysis, critique, and reflection ✓
 - (d) able to apply their knowledge and skills to solving problems ✓
 - (e) ethical practitioners
 - (f) capable of effective communication ✓
 - (g) information literate ✓
 - (h) digitally literate ✓

2. Leaders who are:
 - (a) enterprising, innovative and creative
 - (b) capable of initiating as well as embracing change
 - (c) collaborative team workers

3. Professionals who are:
 - (a) capable of independent, self-directed practice ✓
 - (b) capable of lifelong learning
 - (c) capable of operating within an agreed Code of Practice

4. Global Citizens who are:
 - (a) capable of applying their discipline in local, national and international contexts ✓
 - (b) culturally aware and capable of respecting diversity and acting in socially just/responsible ways
 - (c) capable of environmental responsibility

✓ = Developed in this course

In this course, you will be encouraged to develop Graduate Attributes 1(a), 1(b), 1(c), 1(d), 1(f), 1(g), 1(h), 3(a), and 4(a) by undertaking the selected activities and knowledge content. These attributes will be assessed within the prescribed assessment tasks, as shown in Section 5.

You will be supported in developing the above attributes through:

- (i) the design of academic programs;
- (ii) course planning and documentation;
- (iii) learning and teaching strategies; and
- (iv) assessment strategies.

3. RATIONALE FOR INCLUSION OF CONTENT AND TEACHING APPROACH

How the course relates to other course offerings and overall program(s) in the discipline

BE Thesis is a major part of the undergraduate curriculum and it has a significant bearing on the final grade of the BE degree. Thesis work is unique in the sense that it relates to what has been learnt in the entire undergraduate degree program. The School

also encourages projects from industry, in which case one person from the industry acts as a co-supervisor.

Learning and teaching philosophy underpinning the course (drawing on the UNSW Guidelines on Learning that Inform Teaching at UNSW where appropriate)

Effective learning is supported when you are actively engaged in the learning process and by a climate of enquiry, and these are both achieved by regularly meeting your supervisor and other staff members. Activities that are interesting and challenging, but which also create opportunities for you to have fun, can enhance the learning experience.

You become more engaged in the learning process if you can see the relevance of your studies to professional, disciplinary and/or personal contexts, and the relevance is found in all parts of thesis work.

4. TEACHING STRATEGIES

The teaching strategies used in the course and the ways they support student learning outcomes

There is no formal teaching but the students learn from both internal and external sources. The supervisor, other academics and laboratory/workshop staff are the internal sources, whereas the Library, internet and industry mentors are the external sources.

5. ASSESSMENT

It is your responsibility to keep your project details (supervision, title, working abstract) up to date in the “your project details” section of Moodle. If you do not have information in here or the supervisor name is incorrect, your progress report will not get assigned for marking.

Progress Report due Monday Week 13, 5pm.

Please submit your Progress Report electronically, directly through the portal which will be made available on Thesis A Moodle.

The supervisor will assess the report and grade the work as **Satisfactory** or **Fail**; in order to progress to MMAN4020 Thesis B the grade must be Satisfactory. The supervisor will provide feedback on the student’s progress, and may ask for additional material (i.e. expanded literature review). It is up to you to discuss with your supervisor the exact content of the report, but it should be based on the template that will be made available on Moodle. It should be noted that a Satisfactory grade in this course is provisional pending successful completion of MMAN4020 Thesis B during the next semester.

Your supervisor will be asked:

- Did the student complete a progress report on time – normally end of week 13?
- Has the student completed an appropriate amount of work for a 6UoC component?
- Have you had regular contact with the student (i.e. at least once every 2 weeks or so)?

- Is the student on-track for timely completion?
- Does the student have all resources required to complete their project?
- Please provide a rough estimate of the student's performance to date (note: student must be marked satisfactory or higher to progress to Thesis B. There are no actual marks associated with these levels for Thesis A – only satisfactory or unsatisfactory will be awarded):
 - o Outstanding (i.e. high distinction potential)
 - o Good (credit or distinction standard)
 - o Satisfactory (pass)
 - o Unsatisfactory (please provide details)

The final grade for all the work in Thesis (both A and B) is contained in the mark for MMAN4020 Thesis B. 10% of the final mark will come from the Thesis Conference presentation, which will be given in Thesis B. The thesis is marked independently by two examiners, one being the supervisor, and an agreed mark is the final score.

Note that, if the final score in the thesis is below Pass mark, the student must repeat the entire thesis work, i.e. both MMAN4010 Thesis A and MMAN4020 Thesis B. For a repeating thesis both the supervisor and the topic are to be changed.

6. ACADEMIC HONESTY AND PLAGIARISM

Plagiarism is using the words or ideas of others and presenting them 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 booklet which provides essential information for avoiding plagiarism:

<https://my.unsw.edu.au/student/academiclife/Plagiarism.pdf>

There is a range of resources to support students to avoid 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. Information is available on the dedicated website Plagiarism and Academic Integrity website:

<http://www.lc.unsw.edu.au/plagiarism/index.html>

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 a honours thesis) even suspension from the university. The Student Misconduct Procedures are available here:

<http://www.gs.unsw.edu.au/policy/documents/studentmisconductprocedures.pdf>

Further information on School policy and procedures in the event of plagiarism is presented in a School handout, Administrative Matters for All Courses, available on the School website.

7. COURSE SCHEDULE

There is no prescribed schedule. The day-to-day activities are based on guidance from the supervisor. The student must be in regular contact with the supervisor (weekly is recommended), and anything less than once a month in person is likely to concern the supervisor and may affect your progress to Thesis B should your work be deemed poor. Frequent email updates are preferred by some supervisors – it is up to you to reach an agreement that works for both parties.

8. RESOURCES FOR STUDENTS

Textbook details, including title, publisher, edition, year of publication and availability (in bookshop, UNSW library, MyCourse)

No prescribed textbook.

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

9. COURSE EVALUATION AND DEVELOPMENT

We are continuing to implement some significant overhauls to thesis marking, topic allocations, content delivery (i.e. greater use of Moodle), and the raising of standards required of student work to obtain distinctions and high distinctions. The faculty is also moving to standardise Thesis to an extent across all schools. All discussion and changes are based on staff and student feedback, and we always welcome this – a section on the Moodle site will be set up to discuss student-focused, student-generated ideas in particular.

10. ADMINISTRATIVE MATTERS

You are expected to have read and be familiar with “[Administrative Matters](#)”, available on the School website. This document contains important information on student responsibilities and support, including special consideration, assessment, health and safety, and student equity and diversity.

Associate Professor Tracie Barber, Course Convener
February 2015