



Mechanical and Manufacturing Engineering

# Course Outline

Semester 2 2018

MMAN4410

FINITE ELEMENT METHODS

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# 1. Staff contact details

Contact details and consultation times for course convenor

**Course Convenor:** Mr. Phil Howlin

Office Location: Ainsworth Building J17/311E

Tel: (02) 9385 4180

Email: [p.howlin@unsw.edu.au](mailto:p.howlin@unsw.edu.au)

**Head Demonstrator:** Jake Bradbury

Email: [jake.bradbury@unsw.edu.au](mailto:jake.bradbury@unsw.edu.au)

**Other Demonstrators:** (alphabetical)

Amorish Banerje

Keith Ly

Gyani Shankar Sharma

Congyuan Tao

Consultation

Consultation concerning this course is available primarily during the software laboratories. Phil and Jake will generally be available during the software laboratories. Outside of these hours, the convenor and demonstrators can be contacted through the [Moodle](#) platform. *Any questions about course content and assessment that are not of a private nature should be directed to a Moodle forum first. Any personal queries about course administration should be directed to Jake via email.*

## 2. Important links

- [Moodle](#)
- [UNSW Mechanical and Manufacturing Engineering](#)
- [Course Outlines](#)
- [Student intranet](#)
- [UNSW Mechanical and Manufacturing Engineering Facebook](#)
- [UNSW Handbook](#)

## 3. Course details

Credit Points

This is a 6 unit-of-credit (UoC) course, and involves 4 hours per week (h/w) of face-to-face contact.

The UNSW website states “The normal workload expectations of a student are approximately 25 hours per semester for each UoC, including class contact hours, other learning activities, preparation and time spent on all assessable work. Thus, for a full-time enrolled student, the normal workload, averaged across the 16 weeks of teaching, study and examination periods, is about 37.5 hours per week.”

This means that you should aim to spend about 9 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
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## 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.



## 6. Assessment

Assessment overview

Assessment	Length	Weight
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Assignments

*Group Assignment*



- o The presentation will be worth 5 of the 55 marks for the major project.
- Final Report
  - o A major report on the FE project will be submitted by Friday Week 13.
  - o The final report will be worth 35 of the 55 marks for the major project.

### *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. Calculations, where they are necessary, should be shown professionally in a manner befitting the submission type. *Scans of hand calculations will not be accepted in this course.*

### *Submission*

The submission of online material should follow the instructions given on the appropriate Moodle page.

Online submissions are required to be submitted via Moodle. No cover sheet is required as all assignments will be identified through your Moodle account. *All digital assignments are due by 5pm on the due date.* An additional allowance will be granted automatically to submit assignments until 11:55pm without penalty, but you accept any risk of technical difficulties with submission. *If you try to submit between 5pm and 11:55pm and Moodle does not accept the submission for any reason, the assignment will be considered late.*

Work submitted late without an approved extension by the course coordinator or delegated authority is subject to a late penalty of 20 per cent (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.



## 7. Expected resources for students

Learning Management System

Moodle LMS, <https://moodle.telt.unsw.edu.au/> will be used for this course. Lecture notes,

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: [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)

Further information on School policy and procedures in the event of plagiarism is available on the [intranet](#).

## 10. Administrativemattersand links

All students are expected to read and be familiar with School guidelines and polices, available on the intranet. In particular, students should be familiar with the following:

- [Attendance, Participation and Class Etiquette](#)
- [UNSW Email Address](#)
- [Computing Facilities](#)
- [Assessment Matters](#) (including guidelines for assignments, exams and special consideration)
- [Exams](#)
- [Approved Calculators](#)
- [Academic Honesty and Plagiarism](#)
- [Student Equity and Disabilities Unit](#)
- [Health and Safety](#)
- [Student Support 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