



MMAN1300

ENGINEERING MECHANICS

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I. Staff Contact Details

Contact Hours

	Day	Time	Location
Lectures	Tuesday Wednesday	12:00 noon - 14:00	Colombo Theatre B

Learning Outcome		EA Stage 1 Competencies
1.	Explain, describe and apply principles and components of Engineering Mechanics. Principles and components include: vectors, forces, torques, mass and inertia, particles and rigid bodies in two dimensions, equilibrium conditions, linear momentum and impact, kinetic and potential energy and internal forces and bending moments in beams.	1.1, 1.2, 2.1, 3.2
2.	Define engineering systems in a mechanically useful way and describe their equilibrium or motion in mathematical and graphical fashion and be able to relate this description to the principles of engineering mechanics.	1.1, 1.2, 2.1, 2.2, 3.2
3.	Discern the relevant principles that must be applied to describe the equilibrium or motion of engineering systems and discriminate between relevant and irrelevant information in the context.	1.1, 1.2, 2.1
4.	Demonstrate an ability to communicate clearly and precisely about technical matters related to Engineering Mechanics.	1.6, 3.2
5.	Accomplish hands on tasks that require the application of knowledge of Engineering Mechanics.	2.1, 2.2

3. Teaching strategies

This course will be delivered both in the classroom and online. Full participation in the class means that you will participate fully in both arenas. That is, you will be held accountable for all content, instructions, information, etc. that is delivered either in class or online. There will also be laboratory or practical exercises that you may have to complete during your self-study time.

Online: The online forum for participation in this class is the Moodle Platform. All official online interactions will take place or be linked clearly and appropriately from this site.

In class: There are three in-class activities in a typical week which we refer to as the Tuesday Lecture, Wednesday Lecture and Problem Solving Session based on the timetable above.

Both the online and in-class segments of this course are organised on the following principles:

- 1. Learning:** Student learning is the first priority - teaching and assessment are secondary concerns. Learning here is defined as gaining new ways of seeing the world, not as being filled with information. We are trying to transform you into engineers and critical thinkers in the discipline.
- 2. Peer Interaction:** Learning is a social activity, and research shows that you will learn most and best when you are actively taught by your peers and, in turn, when you teach them.
- 3. Authenticity:** We will have as much authenticity of engineering practice as is possible within the constraints of the course and where it does not restrain your learning.

4. **High standards:** We will have high standards for achievement in the course, and everyone (including staff) will be accountable for putting in the effort to get you to the standard.
5. **Openness:** As much of the course as possible will be conducted in the open where all participants can be aware of it and comment upon it.

Process: The focus of the course will be on processes, not outcomes. The right outcomes will be a by-product of following the correct processes.

4. Course schedule

<u>Week</u>	Topic	Moodle Quiz	Smart Sparrow	Lab work	Suggested Readings
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12	Machines and Frames, Revision	Quiz 12		Shear Force and Bending Moment Laboratory Experiment	M&K(S) 4/6.
13	No Lecture	Quiz 13	Shear Force & Bending Moment	Shear Force and Bending Moment Laboratory Report Due	

5 Assessment

Assessment task	Length	Weight	Learning outcomes assessed	Assessment criteria	Due date, time	Marks returned
4 x Class Tests	1 hour each	20% (5 marks each)	1, 2, 3, 4	Understanding of lecture material	During PSSs in weeks 3, 6, 9 and 12.	Within 2 weeks after each test
13 x Moodle Quizzes	Unlimited attempts until the due date and time	22% (2 marks each, best 11 out of 13 quizzes will be taken)	1, 2, 3, 4	Understanding of lecture material	5pm Fridays, each week from 1 13.	After the due date
8 x Smart Sparrow Adaptive eLearning Tutorials	Unlimited attempts until the due date and time	16% (2 marks each)	1, 2, 3, 4	Understanding of lecture material	5pm Fridays, weeks 2, 3, 5, 6, 7, 10, 11, 13.	After the due date
3 x Individual Laboratory Reports	See report descriptions on Moodle	12% (4 marks each)	1, 3, 4, 5	Correctness, completeness and professionalism of report	5pm Fridays, weeks 8, 10, 13.	Within 2 weeks after the due date
Final exam	3 hours	30%	1, 2, 3, 4	Understanding of all course content	Exam period, date TBC.	

Assignments

Late submission of online quizzes and adaptive tutorials is **not** permitted in this course.

The lab reports must be submitted to Moodle. No school cover sheet is required. Late submissions of lab reports will be penalised 5 marks per calendar day (including weekends). An extension may only be granted in exceptional circumstances. If you have a compelling reason for being unable to submit your work on time, you must seek approval for an extension from the course convenor **before the due date**.

It is always worth submitting late assessment tasks when possible. Completion of the work, even late, may be taken into account in cases of special consideration.

Assessment Criteria

Further details of individual assessment tasks will be provided on Moodle, including submission procedures and the criteria by which grades will be assigned.

Presentation

All submissions should have a standard School cover sheet which is available from this

All submissions are expected to be neat and clearly set out. Your results are the pinnacle of all your hard work. Presenting them clearly gives the marker the best chance of understanding your method; even if the numerical results are incorrect.

Submission

Late submissions will be penalised 5 marks per calendar day (including weekends). An extension may only be granted in exceptional circumstances. Where an assessment task is worth less than 20% of the total course mark and you have a compelling reason for being unable to submit your work on time, you must seek approval for an extension from the course convenor **before the due date**. Special consideration for assessment tasks of 20% or greater must be processed through student.unsw.edu.au/special-consideration.

It is always worth submitting late assessment tasks when possible. Completion of the work, even late, may be taken into account in cases of special consideration.

Examinations

In class tests are scheduled during Problem Solving Sessions as listed in the assessment schedule above.

You must be available for all tests and examinations. Final examinations for each course are held during the University examination periods, which are June for Semester 1 and November for Semester 2.

Provisional Examination timetables are generally published on myUNSW in May for Semester 1 and September for Semester 2

For further information on exams, please see the [Exams](#) section on the intranet.

Calculators

You will need to provide your own calculator, of a make and model approved by UNSW, for the examinations. The list of approved calculators is shown at student.unsw.edu.au/exam-approved-calculators-and-computers

Plagiarism is a type of intellectual theft. It can take many forms, from deliberate cheating to

Appendix A: Engineers Australia (EA) Professional Engineer Competency Standards

	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 r 1 18141.26 598.9 Tm0 c