



UNSW
AUSTRALIA

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2 2015

Never Stand Still

Engineering

Mechanical and Manufacturing Engineering

MMAN1300

ENGINEERING MECHANICS

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Contact details and consultation times for course convenor

Mark Whitty
Ainsworth Building (J17) 311G
Tel: (02) 9385 4230
Email: m.whitty@unsw.edu.au

Consultation concerning this course should in the first instance be made with your demonstrators, then using the Moodle discussion forums and as a last resort by email to the course lecturers.

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

A/Prof Nicole Kessissoglou
Ainsworth Building (J17) 408C
Tel: (02) 9385 4166
Email: n.kessissoglou@unsw.edu.au

Demonstrators

| Name | Contact email address |
|--|--|
| Benjamin Fraser (head demonstrator) | benjamin.fraser@unsw.edu.au |
| Gim Soh | g.soh@unsw.edu.au |

are composed of matter, and they are all subject to forces. As such, Engineering Mechanics is the foundational tool for engineers, and forms the underlying basis for understanding more advanced fields such as Solid Mechanics, Fluid Dynamics, Rigid Body Dynamics, Aerodynamics, Structures, Control and many aspects of Advanced Design.

For many of you, this course is a direct pre-cursor to two Year 2 courses: MMAN2400 Mechanics of Solids 1 and MMAN2300 Engineering Mechanics 2.

Aims of the Course

The aim of this course can be stated simply: For everyone involved (staff, students, demonstrators) to progress further towards becoming really good engineers.

Our field of endeavour will be the concepts and applications of Introductory Engineering Mechanics.

Additionally, we will not measure our progress as the number of equations or facts or theories that we know. Rather as our degree of transformation into someone who sees, understands, can make relevant and accurate predictions, and communicates about the world around us through the lens of Engineering Mechanics.

Student learning outcomes

This course is designed to address the below learning outcomes 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. | 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 |

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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 als

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| Assessment task | Length | Weight | Learning outcomes assessed | Assessment criteria | Due date, time |
|--|--|---|----------------------------|-----------------------------------|---|
| 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. |
| 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. |
| 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 3, 4, 5, 6, 7, 10, 11, 13. |

Feedback from a previous instance of the course suggested that a large number of small assessment tasks was conducive to continued online learning and this has been maintained. Prior to that, improvements included moving to a single platform for online content delivery and assessment.

You are also encouraged to comment on all aspects of the course using the discussion forum within Moodle while the course is being conducted.

8. Academic Integrity

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: <https://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:

<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](#), available on the School website.

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You are expected to have read and be familiar with *Administrative Matters*, available on the School website: https://www.engineering.unsw.edu.au/mechanical-engineering/sites/mech/files/u41/S2-2015-Administrative-Matters_20150721.pdf

This document contains important information on student responsibilities and support, including special consideration, assessment, health and safety, and student equity and diversity.

Mark Whitty and Nicole Kessissoglou
July 2015

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Program Intended Learning Outcomes

PE1.1

**PE1: Knowledge
and Skill Base**