



Mechanical and Manufacturing Engineering

Course Outline

Semester 2 2018

MMAN1300

ENGINEERING MECHANICS 1

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 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.	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	

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 Monday Lecture, Tuesd

Assessment Criteria

PSS Hand-ins

- x Students will get 1 mark in the first 15 minutes of class for each week that they show their demonstrators a complete and reasonable attempt at all hand-

Type of Assessment	
Block tests 1-4	No supplementary
Weekly assessment	PSS one week late, 0.5 marks and Moodle, no late submissions
Laboratory	Reports submission via Moodle
Final Examination	Standard UNSW special consideration for supplementary

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 <http://student.unsw.edu.au/exam-approved-calculators-and-computers>

Y o u w e e a g t t T 2 b l 3 E

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