		Online
	Wednesday, 9:00 – 11:00	
Workshop	Wednesday, 11:00 – 13:00	Online
	Wednesday, 13:00 – 15:00	Online and Face-to Wednesday 14:00
	Thursday, 12:00-14:00	
	Thursday, 14:00-16:00	

– 15:00 (online and face-to-face)

INFORMATION ABOUT THE COURSE

This course introduces students to structural analysis and computer modelling of structures. It explains the theory and physics behind existing computer software that are used for the analysis of complicated structures. It also provides students with a better understanding of the structural behaviour of beams, frames and trusses under different loading conditions. The tools and knowledge gained in this course are inevitable for the design of structures. The topics that are covered in this course include revision of statics with emphasise on drawing internal forces diagrams; conjugate beam method, energy of structures, principles of virtual work; the force (flexibility) method; stiffness method; and moment distribution method applied to continuous beams.

COURSE 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 the Appendix.

After successfully completing this course, you should be able to: l

Learning Outcome	EA Stage 1 Competencies
1. Demonstrate and understand concepts of structural analysis	PE1.1, PE1.

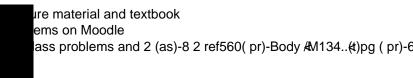| 3.	Become proficient in solving structures with large number of degrees of freedom using computer based codes	PE1.5, PE2.1, PE2.2
4.	Demonstrate collaborative skills by working with other students in teams	PE3.2, PE3.6

HANDBOOK DESCRIPTION

See link to virtual handbook:

http://www.handbook.unsw.edu.au/undergraduate/courses/2020/CVEN2303.html

TEACHING STRATEGIES

Private Study

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ems on Moodle
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Mid-term exam	15	Week 5	The mid-term exam will be assessed on the basis of technical accuracy of calculations and evidence of good engineering judgment. The mid-term exam will be held under open book conditions.	Within two weeks from the day of the exam
Lab assignment	8	Week 8	The lab assignment will be issued on week 8 and will be due on week 10. Only a lab simulation will be conducted followed by a video that describes the test. You will not do the test yourself but would need to submit an assignment related to the lab simulation. You will need to submit the assignment online to the moodle link. The assignment can be hand-written and scanned or typed. This assignment would give you the chance to see actual testing of a truss, and to compare theoretical calculations with experimental measurements taken in the laboratory. A video of the test will be available to view at your convenience. The assignment will be assessed on the basis of technical accuracy of calculations and evidence of good engineering judgment with assumptions and problem simplification.	Within two weeks from submission day

Final Exam   50

Appendix: 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