



School of Civil and Environmental Engineering  
Term 2, 2020

# CVEN9822 Steel and Composite Structures

## COURSE DETAILS

<b>Units of Credit</b>	6	
<b>Contact hours</b>	4 hours per week	
<b>Class</b>	Friday, 11:00 – 14:00	online
<b>Workshop</b>	Friday, 14:00-15:00	online
<b>Course Coordinator and Lecturer</b>	A/Prof Ehab Hamed email: e.hamed@unsw.edu.au office: Rm 716 Civil and Environmental Engineering Building (H20) phone: 93859765	

## INFORMATION ABOUT THE COURSE

A course on the advanced analysis and design of structural elements for students looking towards a career in Structural Engineering. The aim of this course is to extend the understanding of structural behaviour by studying new concepts in the context of design of steel and composite structures. In particular, the course will build on your knowledge in structural steel design to introduce you to detailed design of bolt and weld connections, design of pin connections, and the design and analysis of composite steel-concrete structures at the serviceability and strength limit states.

## 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:

Learning Outcome	EA Stage 1 Competencies
1. Become proficient in the design and analysis of steel connections	PE1.1, PE1.5, PE2.1, PE2.3
2.	

**HANDBOOK DESCRIPTION**

See link to virtual handbook:

<https://www.handbook.unsw.edu.au/undergraduate/courses/2020/CVEN9822/>

**TEACHING STRATEGIES**

<b>Private Study</b>	Review lecture material and textbook Do weekly set problems Reflect on class problems and practicing problems Download materials from Moodle Keep up with notices and find out marks via Moodle
<b>Lectures</b>	Find out what you must learn See methods that are not in the textbook Follow worked examples Hear announcements on course changes
<b>Workshops</b>	Be guided by Demonstrators Practice solving set problems Ask questions Teamwork
<b>Assessments (quizzes, examination)</b>	Demonstrate your knowledge and skills Demonstrate higher understanding and problem solving

**ASSESSMENT**

Assessment will be based on weekly assignments, mid-term quiz, and a final exam. The Final Exam will take place in the UNSW examination week. A mark of at least 40% in the final examination is required before the marks for the quiz and assignments are included in the final mark. If you score in the final exam higher than in the quiz, then the quiz will be disregarded and the weight of the final exam becomes 70%.

The relative value of each of the assessable tasks is as follows:

<b>Item</b>	<b>Marks</b>	<b>Due date</b>	<b>Rational and Assessment criteria</b>	<b>Marks returned</b>
9 Weekly Assignments	18	Weekly	9 Homework Assignments will be available on moodle on a weekly basis. You will need to submit these assignments online to the moodle link. The assignment should be hand-written and scanned. A general marking of Satisfactory = 100, Unsatisfactory = 50, Null = 0 will be given for each assignment and these will be posted on moodle on a weekly basis. A zero score will be given if you do not submit the assignment in due date.  Each assignment worth two marks of the total mark.  These assignments will keep you up-to-date with the course material, and will encourage you to practice some problems on a weekly basis.	Within one week after due date.
Quiz	22	Week 5	The quiz will be assessed on the basis of technical accuracy of calculations and evidence of good engineering judgment. The quiz will be held under open book conditions.	Within two weeks from the day of the quiz

Final Exam 60

The course learning outcomes include a significant level of technical learning, calculations, and engineering understanding of problems. These outcomes can be effectively



## 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 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