

# CVEN2101

Engineering Construction

Term 2, 2023



## Course Overview

### Staff Contact Details

#### Convenors

Name	Email	Availability	Location	Phone
Mohsen Kalantari	<a href="mailto:mohsen.kalantari@unsw.edu.au">mohsen.kalantari@unsw.edu.au</a>	Wednesday 12:30-2:00 pm	Civil Engineering Building (H20) Level 2, Room CE205	93481162

### School Contact Information

[Engineering Student Support Services](#) – The Nucleus - enrolment, progression checks, clash requests, course issues or program-related queries

[Engineering Industrial Training](#) – Industrial training questions

[UNSW Study Abroad](#) – study abroad student enquiries (for inbound students)

[UNSW Exchange](#) – student exchange enquiries (for inbound students)

[UNSW Future Students](#) – potential student enquiries e.g. admissions, fees, programs, credit transfer

#### Phone

(+61 2) 9385 8500 – Nucleus Student Hub

(+61 2) 9385 7661 – Engineering Industrial Training

(+61 2) 9385 3179 – UNSW Study Abroad and UNSW Exchange (for inbound students)

## Course Details

### Units of Credit 6

### Summary of the Course

This course introduces construction processes and equipment. It covers processes related to demolition, earthwork, concreting, and temporary and permanent structures. The course also covers construction equipment and associated production and economics measures. It covers excavation and loading, pushing and hauling, and finishing equipment. The course also discusses sustainability and safety in construction.

### Course Aims

The objectives of this course are to:

- Introduce you to a variety of construction equipment and processes
- Provide you with quantitative tools for planning, estimating and managing the processes
- Enable you to calculate the cost of construction equipment
- Enable you to optimize some of these processes to obtain the most efficient use of equipment
- Introduce you to the many risks of construction and what is important to be safe
- Introduce you to sustainability in construction

### Course Learning Outcomes

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

Learning Outcome	EA Stage 1 Competencies
1. Discuss and explain the construction processes and equipment	PE1.3, PE1.5
2. Apply quantitative methods in planning and managing the processes and equipment	PE2.2, PE2.3
3. Role play in teams to produce engineering reports on the processes and equipment	PE3.2, PE3.6
4. Analyse the production and economics of different equipment	PE2.1
5. Examine and evaluate sustainability and safety in construction	PE1.6

### Teaching Strategies

The course is delivered through lectures and workshops. Every week, students learn about engineering construction topics in lectures. Each lecture also includes interactive sessions on the day's topic when the lecturer and students discuss the theory and how it applies to real-world engineering issues. In addition, the students learn to use the theory through weekly workshops. Each week during a workshop, students are given several engineering construction problems, and they apply the theory to solve the problems. The course includes two lectures per week, each approximately two hours and one workshop

per week, about two hours.

## Assessment

A mark of at least 50% in the final examination is required to pass the course.

Assessment task	Weight	Due Date	Course Learning Outcomes Assessed
1. Group Assignment - Part A	5%	16/06/2023 05:00 PM	1, 3, 5
2. Mid-term Examination	25%	Not Applicable	1, 2
3. Group Assignment - Part B	25%	28/07/2023 05:00 PM	1, 3, 5
4. Final Examination	45%	Not Applicable	1, 2, 3, 4, 5

### Assessment 1: Group Assignment - Part A

**Assessment length:** 100 words

**Due date:** 16/06/2023 05:00 PM

This assignment is conducted in groups of three students and provides them with the opportunity to learn how to work effectively in a team-based environment. Each group needs to identify an under-construction project and select three pieces of construction equipment and three processes for Assessment 3.

This assignment is submitted through Turnitin and students can see Turnitin similarity reports.

### Assessment 2: Mid-term Examination

**Start date:** 25/06/2023 04:00 PM

**Assessment length:** 90 minutes

The mid-term examination includes the material covered from Week 1 to Week 4. The examination will be open-book.

### Assessment 3: Group Assignment - Part B

**Assessment length:** 5000 words

**Due date:** 28/07/2023 05:00 PM

This assignment is conducted in the same group of Group Assignment - Part A. Each group needs to prepare an Engineering Report on the selected construction equipment and processes in Group Assessment 1. The report should clearly identify individual team members' contributions to the report. All the members should contribute to reviewing and editing the report. Individual writings should be blended and integrated into the report.

This assignment is submitted through Turnitin and students can see Turnitin similarity reports.

## **Assessment 4: Final Examination**

**Assessment length:** 120 minutes

The final examination includes the material covered from Week 5 to Week 10, inclusive. A mark of at least 50% in the examination is required to pass the course. The examination will be open-book.

## Attendance Requirements

You need to attend at least 80% of the workshops.

## Course Schedule

[View class timetable](#)

### Timetable

Date	Type	Content
Week 1: 29 May - 2 June	Lecture	Course Introduction
	Lecture	Demolition
	Workshop	Demolition
Week 2: 5 June - 9 June	Lecture	Earthworks
	Workshop	Earthworks
Week 3: 12 June - 16 June	Lecture	Concreting
	Workshop	Concreting
	Assessment	Group Assignment - Part A
Week 4: 19 June - 23 June	Lecture	Temporary Structures
	Workshop	Temporary Structures
Week 5: 26 June - 30 June	Assessment	Mid-term Examination
	Lecture	Permanent Structures
	Workshop	Permanent Structures
Week 6: 3 July - 7 July	Homework	Study Week
Week 7: 10 July - 14 July	Lecture	Construction Sustainability
	Lecture	Digital Engineering Construction
	Workshop	Construction Sustainability
Week 8: 17 July - 21 July	Lecture	Construction Equipment 1
	Workshop	Construction Equipment 1
Week 9: 24 July - 28 July	Lecture	Construction Equipment 2
	Lecture	Construction Equipment 2
	Workshop	Construction Equipment 2

	Assessment	Group Assignment - Part B
Week 10: 31 July - 4 August	Lecture	Construction Equipment 3
	Workshop	Construction Equipment 3



## Submission of Assessment Tasks

Please refer to the Moodle page of the course for further guidance on assessment submission.

**UNSW has a standard late submission penalty of:**

- 5% per day, for all assessments where a penalty applies, capped at five days (120 hours), after which a student cannot submit an assessment, and no permitted variation.

## Academic Honesty and Plagiarism

Beware! An assignment that includes plagiarised material will receive a 0 fail, and students who plagiarise may fail the course. Students who plagiarise are also liable to disciplinary action, including exclusion from enrolment.

Plagiarism is the use of another person's work or ideas as if they were your own. When it is necessary or desirable to use other people's material you should adequately acknowledge whose words or ideas they are and where you found them (giving the complete reference details, including page number(s)). The Learning Centre provides further information on what constitutes Plagiarism at:

<https://student.unsw.edu.au/plagiarism>

## Academic Information

### Final Examinations:

Final Exams in T2 2023 will be held on campus between Friday 11th and Thursday 24th August (inclusive), and Supplementary Exams between Monday 4th and Friday 8th September (inclusive). You are required to be available on these dates. Please do not to make any personal or travel arrangements during this period.

For students enrolled in the distance offering of a postgraduate course, and who reside further than 100km from UNSW Kensington campus, will be contacted regarding sitting an external exam. The school's External Exam Policy can be found on the Intranet.

### ACADEMIC ADVICE

- Key Staff to Contact for Academic Advice (log in with your zID and password): <https://intranet.civeng.unsw.edu.au/key-staff-to-contact-during-your-studies-at-unsw>
- [Key UNSW Dates](#) - eg. Census Date, exam dates, last day to drop a course without academic/financial liability etc.
- CVEN Student Intranet (log in with your zID and password): <https://intranet.civeng.unsw.edu.au/student-intranet>
- Student Life at CVEN, including Student Societies: <https://www.unsw.edu.au/engineering/civil-and-environmental-engineering/student-life>
- Special Consideration: <https://student.unsw.edu.au/special-consideration>
- General and Program-Specific Questions: [The Nucleus: Student Hub](#)
- Book an Academic Advising session: <https://unswengacademicadvising.as.me/schedule.php>

## Disclaimer

*This course outline sets out description of classes at the date the Course Outline is published. The nature of classes may change during the Term after the Course Outline is published. Moodle should be consulted for the up to date class descriptions. If there is any inconsistency in the description of activities between the University timetable and the Course Outline (as updated in Moodle), the description in the Course Outline/Moodle applies.*

## Image Credit

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## CRICOS

CRICOS Provider Code: 00098G

## Acknowledgement of Country

We acknowledge the Bedegal people who are the traditional custodians of the lands on which UNSW Kensington campus is located.

## Appendix: Engineers Australia (EA) Professional Engineer Competency Standard

Program Intended Learning Outcomes	
Knowledge and skill base	
PE1.1 Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline	
PE1.2 Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline	
PE1.3 In-depth understanding of specialist bodies of knowledge within the engineering discipline	✓
PE1.4 Discernment of knowledge development and research directions within the engineering discipline	
PE1.5 Knowledge of engineering design practice and contextual factors impacting the engineering discipline	✓
PE1.6 Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline	✓
Engineering application ability	
PE2.1 Application of established engineering methods to complex engineering 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	
Professional and personal attributes	
PE3.1 Ethical conduct and professional accountability	
PE3.2 Effective oral and written communication in 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	✓