



CVEN4102

Operations and Projects

Term One // 2021

Course Overview

Staff Contact Details

Convenors

Name	Email	Availability	Location	Phone
Johnson Shen	x.shen@unsw.edu.au			+61293850483

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

Credit Points 6

Summary of the Course

This course is designed to extend your knowledge on construction methods, engineering design and operations planning. It covers three categories of operations: building construction, heavy civil construction and underground infrastructure construction. Examples will be given to introduce design theory and best practice in engineering construction, such as how to design a concrete formwork, how to improve the productivity in earthmoving, and how to install a utility tunnel without opening the ground. At the end of the course, you will have a better understanding about a variety of construction processes, practical engineering design and state-of-the-art construction techniques.

Course Aims

The objectives of this course are to:

- Understand a variety of construction processes and methods;
- Identify the key factors adopted in the design of permanent or temporary structures;
- Provide you with procedures and tools for engineering design.

Course Learning Outcomes

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

Learning Outcome	EA Stage 1 Competencies
1. Explain the process of construction operations	PE1.1, PE3.2, PE3.6
2. Work independently on the design a permanent or temporary structure	PE1.5, PE2.1, PE2.2
3. Select a suitable method for constructing buildings and civil infrastructure	PE1.6, PE2.2, PE2.3

Teaching Strategies

Lectures: Find out what you must learn; Follow worked examples; Hear announcements on course changes.

Workshop: Be guided by Demonstrators; Practice solving set problems; Ask questions.

Private Study: Review lecture material and textbook; Do set problems and assignments; Join Moodle discussions of problems; Reflect on class problems and assignments; Download materials from Moodle; Keep up with notices and find out marks via Moodle.

Assessments (examinations and assignments): Demonstrate your knowledge and skills; Demonstrate higher understanding and problem solving.

Observation: Go to construction sites and look through the fence to see what happens! Feel free to ask

about what you see during the tutorials.

Guest Lecture: Hear what actually happens in construction sites from practitioners.

Additional Course Information

Pre-requisites: CVEN2101 Engineering Construction; CVEN3101 Engineering Operations and Control.

Assessment

Assessment Tasks

Assessment task	Weight	Due Date	Student Learning Outcomes Assessed
Quizzes	60%	10/03/2021, 07/04/2021, 28/04/2021	1, 2, 3
Individual Assignments	40%	03/03/2021, 14/04/2021	1, 2, 3

Assessment Details

Assessment 1: Quizzes

Start date: Not Applicable

Length: 1 hour

Details:

The quizzes will assess the basic knowledge covered in the main topics of the course. Students who perform poorly in the quizzes will have a chance to discuss progress with the lecturer during the semester. The quizzes will be of half an hour duration and will be closed book. It consists of both quantitative and theoretical questions.

Assessment Criteria (*this needs to explicitly describe what students are expected to demonstrate in the task*): Understand basic knowledge covered in the main topics and work independently for the engineering design

Quiz 1 - Length: 1 hour; Weight: 20 marks; Due date: 10/03/2021; Deadline for absolute fail: 10/03/2021; Marks returned: 24/03/2021

Quiz 2 - Length: 1 hour; Weight: 20 marks; Due date: 07/04/2021; Deadline for absolute fail: 07/04/2021; Marks returned: 21/04/2021

Quiz 3 - Length: 1 hour; Weight: 20 marks; Due date: 28/04/2021; Deadline for absolute fail: 28/04/2021; Marks returned: 12/05/2021

Penalty for late submission: Your mark will be reduced by 5% for each minute the submission is received after the deadline. Submissions received later than 5 minutes after the submission deadline will not be marked and a student will receive zero marks for the quiz.

Turnitin setting: This assignment is submitted through Turnitin and students do not see Turnitin similarity reports.

Assessment 2: Individual Assignments

Start date: Not Applicable

Length: 2 - 6 weeks

Details:

The purpose of the individual assignments is to work independently on the engineering design of construction operations. Students can reflect and apply what they have learnt from the course by solving practical and open-ended engineering problems.

Assessment Criteria (*this needs to explicitly describe what students are expected to demonstrate in the task*): Work independently on the engineering design of construction operations

Assignment 1 - Length: 2 weeks; Weight: 10 marks; Due date: 03/03/2021; Deadline for absolute fail: 10/03/2021; Marks returned: 10/03/2021

Assignment 2 - Length: 6 weeks; Weight: 30 marks; Due date: 14/04/2021; Deadline for absolute fail: 21/04/2021; Marks returned: 28/04/2021

Penalty for late submission: *Late work will be penalised at the rate of 20% of the total mark per calendar day after the due time and date have expired.*

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

Attendance Requirements

Students are strongly encouraged to attend all classes and review lecture recordings.

Course Schedule

[View class timetable](#)

Timetable

Date	Type	Content
Week 1: 15 February - 19 February	Lecture	Topic: Piling
	Workshop	Topic: Piling
Week 2: 22 February - 26 February	Lecture	Topic: Concrete Formwork
	Workshop	Topic: Concrete Formwork
Week 3: 1 March - 5 March	Lecture	Topic: Scaffolding and Lifting
	Workshop	Topic: Scaffolding and Lifting
Week 4: 8 March - 12 March	Lecture	Topic: Dewatering
	Workshop	Topic: Dewatering
	Assessment	Quiz 1
Week 5: 15 March - 19 March	Lecture	Topic: Shoring
	Workshop	Topic: Shoring
Week 7: 29 March - 2 April	Lecture	Topic: Bracing
	Workshop	Topic: Bracing
Week 8: 5 April - 9 April	Assessment	Quiz 2
Week 9: 12 April - 16 April	Lecture	Topic: Tunnelling
	Workshop	Topic: Tunnelling
Week 10: 19 April - 23 April	Lecture	Topic: Trenchless Techniques
	Workshop	Topic: Trenchless Techniques

Resources

Prescribed Resources

There is no prescribed textbook for this course.

Recommended Resources

There are numerous books in the library covering Construction Methods and Management. If you are having trouble following the lectures or understanding how a construction process works then it is recommended that you look at one of these.

Course Evaluation and Development

Submission of Assessment Tasks

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

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

[Key UNSW Dates](#) - eg. Census Date, exam dates, last day to drop a course without academic/financial liability etc.

Final Examinations:

Final exams in Term 1 will be held online between 30th April - 13th May inclusive. You are required to be available on these dates. Please do not to make any personal or travel arrangements during this period.

Supplementary Examinations:

Supplementary Examinations for Term 1 2021 will be held on 24th - 28th May inclusive should you be required to sit one. You are required to be available on these dates. Please do not to make any personal or travel arrangements during this period.

ACADEMIC ADVICE

For information about:

- Notes on assessments and plagiarism;
- Special Considerations: student.unsw.edu.au/special-consideration;
- General and Program-specific questions: [The Nucleus: Student Hub](#)
- Year Managers and Grievance Officer of Teaching and Learning Committee, and
- CEVSOC/SURVSOC/CEPCA

Refer to Academic Advice on the School website available at:

<https://www.engineering.unsw.edu.au/civil-engineering/student-resources/policies-procedures-and-forms/academic-advice>

Image Credit

Synergies in Sound 2016

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	✓