

CVEN9744

Civil Engineering Practices

Term 2, 2022



Course Overview

Staff Contact Details

Convenors

Name	Email	Availability	Location	Phone
Robert Holdom	robert.holdom@unsw.edu.au	email or office contact by phone or in person	CE211	02 9385 7773

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

Civil engineers deal daily with materials, equipment, people, money and contracts. How these are managed determines the success or otherwise of engineering ventures. Equipment purchases, depreciation and operation, equipment and labour productivity, safety, risk and quality amongst other considerations need close scrutiny. The course looks at such civil engineering focuses, aimed at producing successful projects.

Course Aims

The aim of this course is to transfer in-depth knowledge of industry practice related to materials, equipment, people, money and contracts; develop problem solving skills related to managing these aspects in real world applications; promote advanced thinking in construction.

Course Learning Outcomes

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

Learning Outcome	EA Stage 1 Competencies
1. Select contract types applicable for Civil Engineering-based projects	PE1.3, PE2.2, PE2.4
2. Critically appraise existing systems used to manage materials, equipment, people, money and contracts and propose improvements to these based on a thorough understanding of best industry practice	PE1.1, PE1.2, PE1.3, PE2.1, PE2.2, PE2.3, PE2.4
3. Apply some of the processes and techniques that are used in the evaluating construction equipment selection and construction economics	PE1.2, PE1.3, PE1.6, PE2.1, PE2.2, PE2.4
4. Evaluate construction productivity and its impact on project viability	PE1.2, PE1.3, PE1.5, PE1.6, PE2.1, PE2.3, PE2.4
5. Describe construction safety and risk management issues that are applicable to Civil Engineering operations and projects	PE1.3, PE1.5, PE1.6, PE2.2, PE2.4
6. Identify the construction practices required of an infrastructure project and be able to acquire the knowledge to enable them to be able to contribute within a multi-disciplinary infrastructure team	PE1.1, PE1.2, PE1.4, PE2.1, PE3.6
7. Communicate developed solutions concisely, by presenting their work as a written submission or verbally	PE2.2, PE2.3, PE2.4, PE3.1, PE3.2, PE3.3, PE3.4, PE3.5, PE3.6

Teaching Strategies

Lectures: Structured learning content.

Tutorials/workshops: Guided problem solving.

Private study: Review of lecture and tutorial material; library work; additional problem solving.

Assessment: Assignments and Class Tests.

Additional Course Information

This course assumes that the student is familiar with civil engineering construction operations from their undergraduate studies. It is expected that students will be engaged with both individual study and group work in completing this course.

Assessment

Assessment task	Weight	Due Date	Course Learning Outcomes Assessed
1. Individual Assignment - Contracts and Rise and Fall Payments	35%	07/07/2022 05:00 PM	1, 2, 6, 7
2. Group Assignment	20%	28/07/2022 05:00 PM	2, 7
3. Class Tests	45%	Not Applicable	1, 2, 3, 4, 5, 6, 7

Assessment 1: Individual Assignment - Contracts and Rise and Fall Payments

Assessment length: The submission requires you to complete two essays.

Submission notes: Students are to submit their essays as a single pdf. Follow the instructions issued for the Assignment.

Due date: 07/07/2022 05:00 PM

Deadline for absolute fail: 12/07/2022 05:00 PM

Marks returned: Within 2 weeks

This assignment requires you to investigate two contract types and their use in civil engineering and 'rise and fall' payment usage in industry. In preparing your written submission you will be required select projects, ascertain the contract type being used, comment on its applicability in industry, identify any troublesome areas in the use of these selected contract types and reflect upon your training to date as to whether you are sufficiently trained to administer the construction contracts you have reviewed.

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

Assessment criteria

Essay Content:

Structure including the use of any *Appendix(s)* structure and how it (they) connect to the '*mainbody*' writings of the essay: 15%

Content within the *Introduction*, '*mainbody*' writings, *Conclusion*: 45%

Quality of your submission:

Writing is technically correct and interesting: 10%

English grammar and style: 10%

The essays exhibit good flow throughout: 10%

Referencing quality to Harvard standard: 10%

Assessment 2: Group Assignment

Assessment length: 4500 words

Submission notes: The group is required to nominate their topic before 23rd June for which they will receive 2% of the marks available for this Assignment. The remainder of the marks will be allocated to the submission of a single pdf submission in accordance with the issued instructions for the Group Assignment. Only one student is permitted to upload the Assignment submission so as to maintain the Turnitin integrity.

Due date: 28/07/2022 05:00 PM

Deadline for absolute fail: 02/08/2022 05:00 PM

Marks returned: After release of Term 2 results

In this Assignment students are to form into groups of three students. Groups are to include students who are attending compus classes and on-line students wherever possible. Students select their topic from the options available, and once approved can commence their the submission requirements.

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

Assessment criteria

Engineering Report Content:

Structure including the use of any *Appendix(s)* structure and how it (they) connect to the *mainbody writings* of the report: 20%

Content within the *Introduction, mainbody writings, Conclusion and Executive Summary*: 45%

Quality of your submission:

Writing is technically correct and interesting: 15%

English grammar and style: 10%

Referencing quality to Harvard standard: 10%

Additional details

The allocation of the 2% of the marks for the Group Assignment will be the marks feedback prior to Census Date for the term.

Assessment 3: Class Tests

Assessment length: determined by the issued Answer template provided for each Class Test

Submission notes: Uploaded Class Test submissions in accordance with the issued instructions for each Class Test.

Marks returned: Within two weeks of each Class Test sitting.

The course is broken up into three x (3-week) elements which will be individually assessed by way of three separate tests each of nominally 75 minutes duration. These have been programmed of the

Saturdays of Weeks 4, 7, & 10. Each Class Test will commence at 10am on the day and students will be issued with Class Test Instructions and an Answer Template in advance of each Class Test.

Students will complete their work at their home and provide their hand-written answers onto the issued Answer Template. Then a student is required to scan and upload their submission as a single pdf. Students are to maintain their hand-written answers until they receive their marks return for their submission.

An allowance of 10-minutes Reading Time and 20-minutes for scanning and uploading of a students submission will be added to the 75 minutes for the total Class Test duration, after which the submission portal on the Moodle will close.

Assessment criteria

Answers graded in accordance with the marks allocated for each question.

Hurdle requirement

There are two requirements that have to be met in order to successfully complete this course:

1. Students are not required to pass each Class Test but are required to obtain at least 50% of the marks allocated for all three Class Tests to be able to become eligible for a pass for this course.
2. Students must complete each of the Assignments successfully to become eligible for a pass for this course.

Attendance Requirements

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

Course Schedule

All Lectures and Workshops will ordinarily be presented by Mr Robert Holdom and students will be advised of changes to this expectancy.

The weekly Lecture and Workshop will be an integrated evening program. The weekly allocated time (18:00 – 21:00h) will be recorded as a 'Lecture' and made available on the course Moodle should you want to review any content.

Term 2, 2022 to held in Room CE 701 and on-line

Date	Topic and Lecture Content	Demonstration Content
30/05/2022 (Week 1)	Introduction to civil engineering practices	Outline of Assignments Planning of Site Meetings Dealing with subsoil ground conditions
06/06/2022 (Week 2)	Equipment purchasing & construction economics Part 1	Blasting calculations Detonation methods
13/06/2022 (Week 3)	Queen's Birthday Public Holiday on Monday 13th June, 2022. No class. Recorded lecture: Contracts used in civil engineering practices Factors that impact on contract selection	No class. Learning from recorded lecture
20/06/2022 (Week 4)	Equipment purchasing & construction economics Part 2	Accessing Australian Standards through UNSW Library 'Caterpillar' Handbook Equipment selection Class Test 1 on Saturday Assessment Task 2 - part 1 due
27/06/2022 (Week 5)	Factors that impact on capital spending	Dredging operations calculations

04/07/2022 (Week 6)	Flexibility week for all courses (non-teaching) No class.	No class. Assessment Task 1 due
11/07/2022 (Week 7)	Construction safety and risk management Part 1	Methods and design of placing concrete Class Test 2 on Saturday
18/07/2022 (Week 8)	Internal Rate of Return (IRR) Analysis	Pump-placed concrete Tremmie-tube placed concrete Compressed air system design
25/07/2022 (Week 9)	Construction safety and risk management Part 2	Equipment selection in civil construction operations Design of material handling operations Assessment Task 2 - part 2 due
01/08/2022 (Week 10)	Current industry issues Course Review	Lecture/ Workshop Discussion Class Test 3 on Saturday

[View class timetable](#)

Timetable

Date	Type	Content
O-Week: 23 May - 27 May		
Week 6: 4 July - 8 July	Assessment	Individual Assignment - Contracts and Rise and Fall Payments: Students are to submit their essays as a single pdf. Follow the instructions issued for the Assignment.
Week 9: 25 July - 29 July	Assessment	Group Assignment: The group is required to nominate their topic before 23rd June for which they will receive 2% of the marks available for this Assignment. The remainder of the marks will be allocated to the submission of a single pdf submission in accordance with the issued instructions for the Group Assignment. Only one student is permitted to upload the Assignment submission so as to maintain the Turnitin integrity.

Resources

Prescribed Resources

There are no prescribed texts for CVEN9744.

Recommended Resources

The lecturer will provide you with prescribed weekly readings for each lecture topic and:

- You are required to conduct your own Literature Research in completing the assessment elements of CVEN9744 Civil Engineering Practices. This should be discussed with the UNSW library staff as to how you can undertake independent research and find your resources.
- Independently seek new material by reviewing suggested additional readings and availability (in bookshop, UNSW Library, Open Reserve).
- Additional materials provided on Moodle.
- Recommended Internet sites.

Course Evaluation and Development

Students are requested to complete the MyExperience course evaluation at the end of the term.

Laboratory Workshop Information

There are no laboratory sessions for this course. A weekly Workshop session will follow the weekly Lecture.

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 2022 will be held online between 12th - 25th August 2022 inclusive, and supplementary exams between 5th - 9th September 2022 inclusive. You are required to be available on these dates. Please do not to make any personal or travel arrangements during this period.

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://app.acuityscheduling.com/schedule.php?owner=19024765>

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

Mike Gal.

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	✓