



School of Civil and Environmental Engineering

Term 1, 2022

CVEN4050

Thesis A

COURSE DETAILS

Units of Credit	6	
Contact hours	4 hours per week	
Class	Monday, 14:00 – 16:00	On-line
Workshop	Monday, 12:00 – 14:00 Monday, 16:00 – 18:00	On-line or Room/s: TBA (see Moodle) On-line or Room/s: TBA (see Moodle)
Course Coordinator and Lecturer	Mr Robert Holdom email: robert.holdom@unsw.edu.au office: CE211 phone: 02 9385 7773	

INFORMATION ABOUT THE COURSE

This course is available to all Civil Engineering, Environmental Engineering and Surveying students who are completing their final year of study in their four year undergraduate degree. CVEN4050 forms the first part of the Coursework Thesis program, with CVEN4051 Thesis B, following this course in a later term. The intention with this course is to bring focus to the student about what they need to prepare for themselves to become ready for employment. The Thesis A topic is presented to the student as it would be in industry and each student is required to prepare an individual Thesis submission by way of an *Engineering Report* that contains all of the elements required within the Assessment Overview.

The selected topic for Term 1, 2022 is focused on Façade and Fire Design issues (including Wind Design).

As the course will involve several submissions throughout the term, Thesis A will be completed incrementally. The final submission of Thesis A will be as a single volume.

Prerequisite: 132 UOCs needed to enrol in this course.

Excluded: CVEN4032, CVEN4033, CVEN4040, CVEN4041, CVEN4951, CVEN4952, CVEN4953.

HANDBOOK DESCRIPTION

This course is the first of two parts and is undertaken before CVEN4051 Thesis B, usually in the proceeding term. The Thesis involves formulating the designs for and solution to open-ended civil and/or environmental engineering problems. The problems will be drawn from industry and will be multi-disciplinary involving application of material learnt throughout the undergraduate program and will require creative thought. The course will include the preparation of relevant professional documents. Part A involves the formulation of a project plan, project brief and documents and involves review of various literature.

<https://www.handbook.unsw.edu.au/undergraduate/courses/2022/CVEN4050/>

OBJECTIVES

List the objectives of the course.

Link the objectives with the program outcome attributes and the assessment strategies for this course. In other words, how do the assessment strategies assist in achieving these objectives, and how do the objectives contribute to achievement of program outcome attributes?

List of programme attributes:

- An in-depth engagement with the relevant disciplinary knowledge in its inter-disciplinary context
- Capacity for analytical and critical thinking and for creative problem solving
- Ability to engage independent and reflective learning
- Information literacy
- Skills for collaborative and multi-disciplinary work
- A respect for ethical practice and social responsibility
- Skills for effective communication

TEACHING STRATEGIES

The teaching strategies that will be used and their rationale:

Private Study	<ul style="list-style-type: none">• Review lecture material and design manual• Do set problems and assignments• Reflect on class problems and assignments• Download materials from Moodle• Keep up with notices and find out marks via Moodle
Lectures	<ul style="list-style-type: none">• Find out what you must learn• See methods that are not in the textbook• Follow worked examples• Hear announcements on course changes
Workshops	<ul style="list-style-type: none">• Be guided by Demonstrators• Practice solving set problems• Ask and answer questions
Assessments	<ul style="list-style-type: none">• Demonstrate your knowledge and skills• Demonstrate higher understanding and problem solving• Demonstrate presentation and documented reporting skills

EXPECTED 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 Appendix A.

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

Learning Outcome	EA Stage 1 Competencies
1. <i>Apply the concepts in the analysis and construction methods used in the placement of a different building Façades.</i>	<i>PE1.1, PE1.2, PE1.3, PE1.5, PE2.2, PE2.3</i>
2. <i>Apply the concepts used in nominating and selecting materials for the construction for the control of fire in buildings and engineering structures.</i>	<i>PE1.1, PE1.2, PE1.3, PE1.5, PE2.2, PE2.3</i>
3. <i>Be able to pass critique on existing structures concerning façade and fire related matters.</i>	<i>PE2.1, PE3.1, PE3.2, PE3.5, PE3.6</i>
4. <i>Communicate the design concepts, actual designs and critiques through presentations and in written form, to industry expected standard.</i>	<i>PE3.2, PE3.3, PE3.4, PE3.5, PE3.6</i>

For each hour of contact it is expected that you will put in at least 1.5 hours of private study.

COURSE PROGRAM

In commencing CVEN4050 Thesis A in Term 1 2022, the lectures for *Facade and Fire* will be presented by Mr Robert Holdom.

Guest Lecturers may be sought to present throughout the term to deliver topics that may assist students in the preparation of Thesis A or develop other skills to prepare students entering the profession.

The Workshops are scheduled in two 2-hour time-slots and it is a mandatory requirement that students attend their selected Workshop that is either preceding the lecture or following the lecture. Each Workshop has been programmed for nominally 18 students, and students may be further subdivided into subgroups of 4 or 5 in each Workshop. Whilst students are required to make individual submissions for their thesis assessment task components, much of the learning within the Workshops will be under the direction of the Demonstrator and the subgroups will become self-directing in their learning – which requires your weekly regular commitment and participation in your allocated Workshop.

It is a course requirement that every subgroup team will spend at least 20 minutes each week speaking with their Demonstrator who will provide guidance and direction to students on the requirements in completing Thesis A.

Term 1 2022

Date	Topic and Lecture Content	Demonstration Content
14/02/2022 (Week 1)	Course Introduction Introduction to building facades Outline of Thesis A requirements Your employment – preparing your Resume	Workshop finalisation Commence Assessment Task 1
21/02/2022 (Week 2)	Weatherproofing structures and cladding systems Construction overview	Continue with Assessment Task 1
28/02/2022 (Week 3)	Glass and aluminium systems Testing and quality control issues	Submit Assessment Task 1a Continue with Assessment Task 1b
07/03/2022 (Week 4)	Managing façade defects Energy and environment issues	Submit Assessment Task 1b Commence Assessment Task 2
14/03/2022 (Week 5)	Fire Engineering and its professional requirements Integrated engineering design and construction	Continue with Assessment Task 2 Commence Assessment Task 3
21/03/2022 (Week 6)	Flexibility Week – No class	Submit Assessment Task 2 Continue with Assessment Task 3
28/03/2022 (Week 7)	Standards of practice	Continue with Assessment Task 3
04/04/2022 (Week 8)	Integrated Façade and Fire design	Submit Assessment Task 3 Commence Assessment Task 4
11/04/2022 (Week 9)	Integrated Façade and Fire design continued	Continue with Assessment Task 4
18/04/2022 (Week 10)	Easter Monday Public Holiday – No class Guidance on CVEN4051 Thesis B Literature Search	Submit Assessment Task 4

ASSESSMENT

The final grade for your Thesis A is based on the sum of the scores from each of the assessment tasks. All items in the Assessment Tasks must be passed at a minimum grade of 50% of the marks allocated for each item. The elements within those submission parts once compiled will be your completed Thesis A document. You will not be required to submit a printed copy of your compiled Thesis A, however, you should be considering doing the same so that you can take the document to an employment/ job interview. Your Final Mark for Thesis A, will be aggregated total of all Thesis A assessment task items.

Your Assessment Task submissions will be marked by your Workshop Demonstrator and separately by another marker. This is to maintain quality standards across the course and within each Workshop.

Students who perform poorly in any of the Assessment Tasks outlined in the Assessment Overview are recommended to discuss their progress firstly with their assigned Demonstrator or with the Lecturer at the first available opportunity (within a week) during the term on receipt of that poor performance.

[Note: The lecturer reserves the right to adjust the final scores by scaling if agreed by the Head of School.]

Whilst not applicable to students completing CVEN4050 Thesis A, please note: Supplementary Examinations for Term 1, 2022 will be held on Monday 23rd – Friday 27th May (inclusive) should you be required to sit one. You are required to be available during these dates. Please do not to make any personal or travel arrangements during this period.

PENALTIES

As outlined in the Assessment Overview, there is no provision being allowed for late submissions in Thesis A. Students should consider that this course operates as does business, in that SET DEADLINES have to be met. You are thereby advised to plan and use your time wisely in preparing your work in meeting the deadlines.

ASSESSMENT OVERVIEW

Item	Length	Weighting	Learning outcomes assessed	Assessment Criteria	Due date and submission requirements	Deadline for absolute fail	Marks returned
1. <u>Façade Engineering</u> a. Site Inspection Report	Appendix submission	1%	1, 2, 3 & 4	Separate submissions for each of: 1a & 1b. These submissions will be appendices within Thesis A.	Before 1700h 10 March 2022 Upload to Moodle	There are no extensions on any of these elements, so the posted due dates are final.	Week 4
b. Site Inspection Report	Appendix submission	9%			Before 1700h 17 March 2022 Upload to Moodle		Week 6
2. <u>Fire Engineering</u> Site Inspection Report	Appendix submission	20% + 10% of 4.	1, 2, 3 & 4	Single submission for Item 2. This submission will be an appendix within Thesis A.	Before 1700h 24 March 2022 Upload to Moodle		Week 8
3. <u>Design Report</u> Façade & Fire (including wind design)	Appendix calculations	20% + 10% of 4.		Single submission for Item 3. This submission will be an appendix within Thesis A.	Before 1700h 07April 2022 Upload to Moodle		Week 10
4. <u>Thesis Submission Documents</u>	Item 2 Item 3	50% total: 10% * 10% *	1, 2, 3 & 4	Marked when Item 2 is submitted Marked when Item 3 is submitted	10 March 2022 24 March 2022		Week 8 Week 10
<u>Final Thesis A Document</u>	8 pages, plus Appendix provisions	30%		The Thesis A document is to be presented as an <i>Engineering Report</i> and will be marked accordingly: Executive Summary: 10% Presentation/ content: 10% Writing/ reference quality: 10%	Before 17:00h 21 April 2022 Upload to Moodle		Post course

RELEVANT RESOURCES

There are no prescribed texts for Thesis A

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

- You are required to conduct your own Literature research in completing CVEN4050 Thesis A. This should be discussed with the UNSW library staff as to how you can undertake independent research and find your resources.
- Independent seek new material by reviewing suggested additional readings and availability (in bookshop, UNSW Library, Open Reserve).
- Additional materials provided on Moodle.
- Recommended Internet sites.

DATES TO NOTE

Refer to MyUNSW for Important Dates available at:

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

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 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 - <https://www.student.unsw.edu.au/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 [Home \(unsw.edu.au\)](https://www.unsw.edu.au)
- Refer to Academic Advising: <https://app.acuityscheduling.com/schedule.php?owner=19024765>

Appendix A: 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